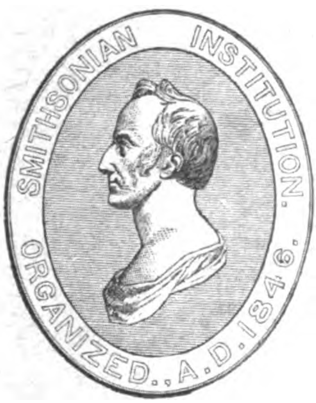
SMITHSONIAN

MISCELLANEOUS COLLECTIONS.

VOL. XXXII.



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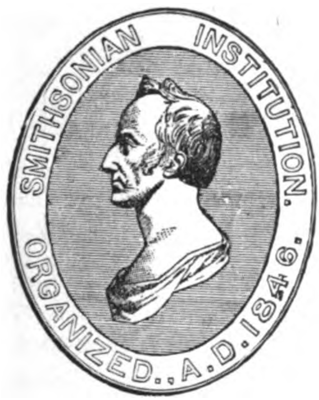

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S. P. LANGLEY,
Secretary S. I.

CONTENTS OF VOL. XXXII

SMITHSONIAN MISCELLANEOUS COLLECTIONS.

— 659 —

THE CONSTANTS OF NATURE.

PART I.

A TABLE OF SPECIFIC GRAVITY FOR SOLIDS AND LIQUIDS.

[NEW EDITION. REVISED AND ENLARGED.]

BY

FRANK WIGGLESWORTH CLARKE,

Chief Chemist U. S. Geological Survey.

WASHINGTON:
PUBLISHED BY THE SMITHSONIAN INSTITUTION.
1888.

PRINTED AND STEREOTYPED BY
JUDD & DETWEILER,
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TABLE OF CONTENTS.

INTRODUCTION.

Early in 1872 I submitted to the Secretary of the Smithsonian Institution, the late Joseph Henry, a manuscript entitled "A Table of Specific Gravities, Boiling Points, and Melting Points for Solids and Liquids." It was accepted for publication, and in February, 1874, the printed copies were ready for distribution. For years previously Professor Henry had had in mind the publication of a series of similar tables somewhat upon the plan long before suggested by Babbage, and accordingly my modest work was given the somewhat ambitious title of "The Constants of Nature" and made the first part of the proposed undertaking. Subsequently Parts II, III, and V were furnished by myself and Part IV by Professor G. F. Becker, and in 1876 I also published a supplement to Part I.

The following tables form, in effect, a new edition of Part I, completely revised, rearranged, and brought down as nearly as possible to the date of printing. They are, however, modified by the omission of boiling and melting points, except when such data seemed essential to the proper identification of a compound, on the ground that the magnificent tables of Professor Carnelley already supply that want. I have limited myself to specific gravity alone, following in the main the plan of arrangement adopted in my earlier work, with such changes as were made necessary by the later developements of chemical thought. Constitutional formulæ have been used, not according to any fixed rule, but according to convenience, and their adoption has been governed, to some extent, by the limitations of the octavo page. All other details have been subject to the same limitations, and it is hoped that their absence will be compensated for by the almost uniformly full references to literature. Some data could not be traced back to their original sources, at least not without unwarrantable labor, and most of these formed part of an early table prepared nearly twenty years ago for my own private use. A few determinations are accredited to standard works of reference, such as Watts' Dictionary, Dana's Mineralogy, and the like, and many have been drawn from the Jahresbericht. Absolute completeness cannot, of course, be claimed, and in some directions it has not

even been attempted. Among minerals, only those having approximately definite formulæ are given, and indefinite substances have been excluded altogether. The tables aim at reasonable completeness only as regards *artificial substances of definite constitution*, and all else is gratuitous. A good many determinations of specific gravity have been unearthed from doctoral dissertations, school programmes, and similar foes of the bibliographer, and doubtless other data so printed have escaped my notice altogether. There is a weakness of human nature which, masquerading as patriotism, sometimes leads men of science to bury valuable researches in obscure local publications, and a compiler may never flatter himself that no such paper has eluded his vigilance. I shall be glad to receive notice of all omissions, and will try to rectify such or other errors in future supplements or appendices.

A word in conclusion as to the extent of the table. They contain the specific gravities of 5,227 distinct substances and 14,465 separate determinations. The original edition gave only 2,263 substances, to which nearly 700 were added in the supplement. The increase is a noteworthy indication of existing chemical activity.

F. W. CLARKE.

WASHINGTON, *June* 20, 1888.

EXPLANATORY NOTES.

In references to literature the following abbreviations have been used. In each case, as far as practicable, series, volume, and page are indicated, the page reference signifying, according to circumstances, either the first page of the paper cited, or else the actual page upon which the determination is given. The former rule applies to pages containing many data; the latter to cases in which the specific gravity datum is merely incidental.

A. C. J.—American Chemical Journal.
A. C. P.—Annalen der Chemie und Pharmacie.
A. J. S.—American Journal of Science.
Am. Chem.—American Chemist.
Am. J. P.—American Journal of Pharmacy.
Am. Phil. Soc.—American Philosophical Society.
Ann.—Annales de Chimie et de Physique.
Ann. Phil.—Annals of Philosophy.
Arch. Pharm.—Archiv für Pharmacie.

B. D. Z.—Die Beziehungen zwischen Dichte und Zusammensetzung bei festen und liquiden Stoffen. Leipzig, 1860.
Bei.—Beiblätter zu den Annalen der Physik und Chemie.
Ber.—Berichte der Deutschen Chemischen Gesellschaft.
B. H. Ztg.—Berg-und hüttenmännische Zeitung.
B. J.—Berzelius' Jahresbericht.
Böttger.—Tabellarische Uebersicht der specifischen Gewichte der Körper. Frankfort, 1837.
B. S. C.—Bulletin de la Société Chimique.
B. S. M.—Bulletin de la Société Française de Mineralogie.
Bull. Acad. Belg.—Bulletins, Academie Royale de Belgique.
Bull. Geol.—Bulletin de la Société Géologique.
Bull. Heb.—Bulletin Hebdomadaire de l'Association Scientifique de France.
Bull. U. S. G. S.—Bulletin of the U. S. Geological Survey.

C. C.—Chemisches Centralblatt.
C. G.—Chemical Gazette.
C. N.—Chemical News.
C. R.—Comptes Rendus.

D. J.—Dingler's Polytechnisches Journal.
Dm.—Schröder's "Dichtigkeitsmessungen." Heidelberg, 1878.

Erd. J.—Erdmann's Journal.

F. W. C.—This abbreviation indicates the work of students under the direction of F. W. Clarke.

G. C. I.—Gazzetta Chimica Italiana.
Geol. Mag.—Geological Magazine.
G. F. F.—Geologiska Föreningar Förhandlingar.
Gilb. Ann.—Gilbert's Annalen.
Gm. H.—Gmelin's Handbook of Chemistry. Cavendish Society edition.

In. Diss. or Inaug. Diss.—Inaugural or Doctoral Dissertation. Always prefixed by the name of the university from which the dissertation was published.

J.—Jahresbericht über die Fortschritte der Chemie.
J. A. C.—Journal of Analytical Chemistry.
J. C. S.—Journal of the Chemical Society.
J. P. C.—Journal für Praktische Chemie.
J. Ph. Ch.—Journal de Pharmacie et de Chimie.
J. R. C.—Jahresbericht über die Fortschritte * * * der reinen Chemie.

M. C.—Monatshefte für Chemie.
M. C. S.—Memoirs of the Chemical Society.
Mem. Acad. Belg.—Mémoires, Academie Royale de Belgique.
Min. Mag.—Mineralogical Magazine.
M. P. M.—Mineralogische Petrographische Mittheilungen.
M. St. P. Sav. Et.—Mémoires de Savants Etrangers, St. Petersburg Academy.

N. J.—Neues Jahrbuch für Mineralogie, etc.
Nich. J.—Nicholson's Journal.

Öf. Ak. St.—Öfversigt af K. Vet. Akad. Förhandlingar, Stockholm.

P. A.—Poggendorff's Annalen. For convenience, the second series under Wiedemann is covered by the same abbreviation.
P. des C.—Pesanteur Spécifique des Corps. Brisson, Paris, 1787. A German edition by Blumhof appeared at Leipzig in 1795.
P. M.—Philosophical Magazine. London, Edinburgh, and Dublin.
Proc. Amer. Acad.—Proceedings of the American Academy, Boston.
Proc. Amer. Asso.—Proceedings of the American Association for the Advancement of Science.
P. R. S.—Proceedings of the Royal Society. London.
P. R. S. E.—Proceedings of the Royal Society. Edinburgh.
P. R. S. G.—Proceedings of the Royal Society. Glasgow.
P. T.—Philosophical Transactions.

Q. J. S.—Quarterly Journal of Science.

R. T. C.—Recueil des Travaux Chimiques.

Schw. J.—Schweigger's Journal.

S. W. A.—Sitzungsberichte der K. K. Akademie der Wissenschaften. Wien.

Thurston's Report.—Report of the Board on Testing Iron, Steel, and other Metals. Washington, 1881.

U. N. A.—Upsala, Nova Acta.

V. H. V.—Verhandlungen des naturhistorisches Vereines. Bonn.

Watts' Dict.—Watts' Dictionary of Chemistry.

Z. A. C.—Zeitschrift für analytische Chemie.
Z. C.—Zeitschrift für Chemie.
Z. G. S.—Zeitschrift der Deutschen Geologischen Gesellschaft.
Z. K. M.—Zeitschrift für Krystallographie und Mineralogie.

A TABLE OF SPECIFIC GRAVITIES

FOR

SOLIDS AND LIQUIDS.

I. THE ELEMENTS.

Name.		Specific Gravity.	Authority.
Hydrogen.	Liquefied	.025 } 0°	Cailletet and Hautefeuille. C. R. 92, 1086.
"	"	.026 } 0°	
"	"	.032 } —23°	
"	"	.033 } —23°	
"	(Occluded by palladium.)	.620 to .623	Dewar. P. M. (4), 47, 334.
Lithium		.578	Bunsen. J. 8, 324.
"		.589	
Sodium		.9348	Davy. P. T. 1808, 21.
"		.97223, 15°	Gay Lussac and Thénard. See Böttger.
"		.985	Schröder. J. 12, 12.
"		.97	Troost and Hautefeuille. C. R. 78, 970.
"		.9743, 10°	Baumhauer. Ber. 6, 655.
"		.9735, 13°.5	
"		.972	Quincke. P. A. 135, 642.
"		.7414, at boiling point	Ramsay. Ber. 13, 2145.
"		.9725, 0°	Hagen. P. A. (2), 19, 436.
"		.9686, 16°.9, m. of 3	
"		.9287, 97°.6, fused	
Potassium		.865, 15°	Gay Lussac and Thénard. Ann. 66, 205.
"		.874	Sementini. See Böttger.
"		.8427, fused	Playfair and Joule. M. C. S. 3, 76.
"		.8750, 13°	Baumhauer. Ber. 6, 655.
"		.8766, 18°	
"		.8642, 0°	Hagen. P. A. (2), 19, 436.
"		.8298, 62°.1, fused	
Rubidium		1.52	Bunsen. J. 16, 185.
Cæsium		1.872 } 15°	Setterberg. A. C. P. 211, 215.
"		1.884 } 15°	
"		1.886 } 15°	
Glucinum		2.1	Debray. J. 7, 336.
"		1.64 (Cor. for impurities).	Nilson and Petterson. Ber. 11, 384.
"		1.85, 20°	Humpidge. P. R. S. 39, 1.
Magnesium		2.24, m. of 2	Playfair and Joule. M. C. S. 3, 73.
"		1.7430, 5°	Bunsen. J. 5, 363.
"		1.69 } 17°	Kopp.
"		1.71 } 17°	
"		1.75	Deville and Caron. J. 10, 148.
"		1.77, 0°	H. Wurtz. Am. Chem., Mar. 1876.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Zinc	6.861	Brisson. P. des C.
"	6.862	Berzelius. See Böttger.
"	6.9154	Karsten. Schw. J. 65, 394.
"	6.939, m. of 3	Playfair and Joule. M. C. S. 3, 67.
"	7.03 to 7.20	Bolley. J. 8, 387.
"	6.966 } 12°	Schiff. A. C. P. 107, 59.
"	6.975	
"	7.21	Daniell.
"	7.146	Wertheim.
"	6.895	Mallet. D. J. 85, 378.
"	7.2	Roberts and Wrightson. Bei. 5, [817.
" Ordinary	7.1812 } 0°	Kalischer. Ber. 14, 2750.
" Crystalline	7.1841	
" Fused	6.512, m. of 3	Playfair and Joule. M. C. S. 3, 76.
" "	6.48 } Two methods	Roberts and Wrightson. Ann. (5), 30, 181.
" "	6.55	
" "	6.900	Quincke. P. A. 135, 642.
" Solid	7.119, 0°	
" Not pressed	7.142, 16°	Spring. Ber. 16, 2724.
" Once "	7.153, 16°	
" Twice "	7.150, 16°	
Cadmium. Cast	8.6040	Stromeyer. Schw. J. 22, 365.
" Hammered	8.6944	
"	8.670	Children. See Böttger.
"	8.650	Herapath. P. M. 64 (1824), 321.
"	8.6355	Karsten. Schw. J. 65, 394.
" Wire	8.6689	Baudrimont. J. P. C. 7, 278.
" Pure	8.540	Schröder. P. A. 107, 113.
" "	8.566	
" "	8.667	
" Commercial	8.648	
"	8.655, 11°	Matthiessen. J. 13, 112.
"	8.627, 0°	Quincke. P. A. 135, 642.
" Fused	8.394	
" Not pressed	8.642, 17°	Spring. Ber. 16, 2724.
" Once "	8.667, 16°	
" Twice "	8.667, 16°	
"	8.6681, 0°	Vicentini and Omodei. Bei. 11, 769.
"	8.3665, 318°, solid	
"	7.989, 318°, molten	
Mercury. Solid	14.391	Schulze.
" "	14.333, —40°	Hällström. Gilb. Ann. 20, 403.
" "	15.745	
" "	14.485, —60°	Biddle. P. M. 30, 153.
" "	14.0, about	Kupffer and Cavallo.
" "	15.19	Joule. J. 16, 283.
" "	14.1932	Mallet. J. C. S. 34, 275.
" Liquid	13.5681	Brisson. P. des C.
" "	13.575	Fahrenheit. See Böttger.
" "	13.550	Muschenbroek. " "
" "	13.568, 15°.5	Crichton. P. M. 16, 48.
" "	13.613, 10°	Biddle. P. M. 30, 152.
" "	13.6078, 0°	Hällström. Gilb. Ann. 20, 397.
" "	12.810, boiling	
" "	13.586	Scholz. See Böttger.
" "	13.567	Kummer. " "
" "	13.5886, 4°	Kupffer. Ann. (2), 40, 285.
" "	13.535, 26°	

Name.	Specific Gravity.	Authority.
Mercury. Liquid	13.588597	Biot and Arago. Biot's "Traité de Physique."
" "	13.5592	Karsten. Schw. J. 65, 394.
" "	13.582, 5°—10°	
" "	13.570, 10°—15°	Regnault. P. A. 62, 50.
" "	13.558, 15°—20°	
" "	13.59599	
" "	13.59602 0°	Regnault. Ann. (3), 14, 236.
" "	13.59578	
" "	13.595, 0°	Kopp. J. 1, 445.
" "	13.573, 15°	Holzmann. J. 13, 112.
" "	13.603, 12°	Schiff.
" "	13.584, 16°.6	Stewart. P. T. 1863, 430.
" "	13.5953, 0°	Volkmann. Ber. 14, 1708.
Calcium	1.566	
"	1.584	Matthiessen. J. 8, 324.
"	1.584	
"	1.55	Liés-Bodart and Jobin. J. 11, [126.
"	1.6 to 1.8	Caron. J. 13, 119.
Strontium	2.504	Matthiessen. J. 8, 324.
"	2.580	
"	2.4	Franz. J. P. C. 107, 253.
Barium	4.00, about	Clarke. Gilb. Ann. 55, 28.
"	3.75	Kern. C. N. 31, 243.
Boron.* Cryst.	2.68	Wöhler and Deville. Ann. (3), [52, 63.
" Al B_{12}	2.5345, 17°.2, m. of 2	
" $C_2Al_3B_{48}$	2.618, 13°	Hampe. A. C. P. 183, 85 and 96.
" "	2.611, 20°	
Aluminum. Cast	2.50	Wöhler. J. 7, 327.
" Hammered	2.67	
"	2.583, 4°	Mallet. P. T. 1880, 1025.
"	2.688	Barlow. J. C. S. April, 1883.
" Com'l wire	2.8067	A. P. Corbit. Communicated by R. B. Warder.
" " foil	2.8075	W. Bishop.
Gallium	5.935, 23°	Boisbaudran. C. R. 83, 611.
"	5.956, 24°.45	
Indium. In grains	7.110 20°.4	
" "	7.147	Reich and Richter. J. 17, 241.
" Laminæ	7.277	
"	7.362, 15°	Winkler. J. 18, 233.
"	7.421, 16°.8	" J. 20, 262.
Lanthanum	6.049	Hillebrand and Norton. P. A. 156, 473.
"	6.163	
Cerium	6.628	Hillebrand and Norton. P. A. 156, 471.
" After fusion	6.728	
Didymium	6.544	Hillebrand and Norton. P. A. 156, 474.
Thallium	11.862	Lamy. J. 15, 180.
" Wire	11.808 11°	De la Rive. J. 16, 248.
" Cast	11.853	
"	11.777	Werther. J. 17, 247.
"	11.900	
" Cast	11.81	
" Pressed	11.88	Crookes. J. C. S. 1864, 112.
" Wire	11.91	

* According to Hampe, the so-called "crystallized boron" is never pure. Its composition is shown in the formulæ given above.

Name.		Specific Gravity.	Authority.
Carbon.	Diamond	3.550	Brisson. P. des C.
"	"	3.492	Grailich. Bull. Geol. (2), 13, 542.
"	"	3.520	Mohs. Min. 2, 306.
"	"	?.334	Shepard.
"	"	3.5	Berzelius. A. C. P. 49, 247.
"	"	3.55	Pelouze. Watts' Dict.
"	"	3.5295	Thomson. Min. 1, 46.
"	"	3.58	Schafarik. P. A. 139, 188.
"	"	3.51432, 18°.1	Schrötter. J. 24, 257.
"	"	3.5143	Schrauf. J. 24, 257.
"	"	3.529, 15°	Dufrenoy. J. 24, 258.
"	"	3.51835, m. of 5	Baumhauer. J. C. S. 32, 849.
"	Graphite	2.144	Breithaupt. See Böttger.
"	"	2.229	Kenngott. S. W. A. 13, 469.
"	"	2.273	Regnault. Gm. H.
"	"	2.14	Fuchs. J. P. C. 7, 353.
"	"	2.5	Berzelius. A. C. P. 49, 247.
"	"	2.3285	Karsten. Schw. J. 65, 394.
"	"	2.3162	Poggendorff. P. A. Erganz. Bd. 1848, 363.
"	"	2.25 } Purified	Brodie. J. 12, 68.
"	"	2.26 }	
"	"	2.105 }	Mené.* J. 20, 972.
"	"	2.585 }	
"	"	1.802 } 20°, purified	Löwe. J. 8, 297.
"	"	1.844 }	
"	Gas carbon	2.35	Graham.
"	"	2.08	Baudrimont.
"	"	1.885	Mené. J. 20, 972.
"	"	1.723, 1.821, 1.982 }	From different parts of the retort.
"	"	2.056, 2556, 18° }	Meyn. J. P. C. 26, 482.
"	Sugar charcoal	1.81 }	Monier. Bull. Heb. 14, 13.
"	"	1.85 }	
"	Charcoal	1.76	Colquhoun.
"	"	2.10 from alcohol	Scholz. See Böttger.
"	"	1.84	Griffith. " " [4, 241.
"	"	1.80	Playfair. Proc. Roy. Soc. Edin.
"	Lamp-black	1.78	Baudrimont.
"	"	1.723 from kerosene }	Hallock. Bull. 42, U. S. G. S.
"	"	1.780 from coal-tar naphtha }	
"	"	1.752 from natural gas }	
"	"	1.773 from dead oil }	
Silicon.	Graphitoidal	2.49, 10°	Wöhler. J. 9, 347.
"	"	2.493	Harmening. P. A. 97, 487.
"	"	2.004 }	Winkler. J. 17, 208, 209.
"	"	2.194 }	
"	"	2.197 }	
"	"	2.387	Miller. Proc. Roy. Soc. Edin. 4, 241.
"	Adamantine	2.48, m. of 6	Playfair. Proc. Roy. Soc. Edin. 4, 241.
Germanium		5.469, 20°.4	Winkler. J. P. C. (2), 34, 201.
Zirconium		4.15	Troost. J. 18, 183.
Tin		7.291	Brisson. P. des C.
"		7.295	Muschenbroek. See Böttger.

*The extremes of 29 determinations made on specimens from different localities.

Name.	Specific Gravity.	Authority.
Tin	7.2914	Guyton. Nich. J. (1), 1, 110.
"	7.278, 15°.5	Crichton. P. M. 16, 48.
"	7.2911, 17°	Kupffer. Ann. (2), 40, 285.
"	7.285	
"	7.600	Herapath. P. M. 64, 321.
"	7.5565	
"	7.2905	Karsten. Schw. J. 65, 394.
" Wire	7.3395	Baudrimont. J. P. C. 7, 278.
"	7.306, m. of 4	Playfair and Joule. M. C. S. 3, 68.
" Crystallized	7.178	W. H. Miller. P. M. (3), 22, 263.
" Cast	7.293	
"	7.3043	Kopp. A. C. P. 93, 129.
" Cooled slowly	7.373	St. Claire Deville. P. M. (4), 11, 144.
" " quickly	7.239	
"	7.294, 13°	Matthiessen. J. 13, 112.
"	7.291	Mallet. D. J. 85, 378.
" Reduced by H. from $Sn\,Cl_2$.	7.143 7.166	Rammelsberg. Ber. 3, 725.
" Precipitated	7.195	
" Remelted	7.310	
"	7.5	Roberts and Wrightson. Bei. 5, [817.
"	7.267, 0°	Quincke. P. A. 135, 642.
"	7.25	E. Wiedemann. P. A. (2), 20, 232.
" Allotropic	5.809, 5.781, 19° 5.802, 19.5	Two lots. Schertel. J. P. C. (2), 19, 322.
" Allotropic converted by heating.	7.280, 15° 7.304, 19°	
" Allotropic	6.020, 6.002, 19° 5.930, 12°.5	
" Allotropic after reconversion.	7.24 —7.27	
" Rhombic cryst.	6.52	Trechmann. Z. K. M. 5, 625.
" " "	6.56	
" Ordinary	7.387	Richards. Tr. Amer. Inst. Min. Eng. 11, 235.
" Allotropic	6.175	
" Not pressed	7.286, 10°	Spring. Ber. 16, 2724.
" Once "	7.292, 10°.25	
" Twice "	7.296, 11°	
"	7.3006, 0°	Vicentini and Omodei. Bei. 11, 769.
"	7.1835, 226°, solid	
"	6.988, 226°, molten	
" Fused	6.934, m. of 3.	Playfair and Joule. M. C. S. 3, 75.
" "	7.025 Two methods	Roberts and Wrightson. Ann. (5), 30, 181.
" "	6.974	
" "	7.144	Quincke. P. A. 135, 642.
Lead	11.445	Muschenbroek. See Böttger.
"	11.352	Brisson. P. des C.
"	11.207	Böckmann. See Böttger.
"	11.1603	Guyton. Ann. 21, 3.
"	11.3303	Kupffer. Ann. (2), 40, 292.
"	11.346, 15°.5	Crichton. P. M. 16, 48.
" Wire	11.3775	Baudrimont. J. P. C. 7, 278.
"	11.352	Herapath. P. M. 64, 321.
"	11.3888	Karsten. Schw. J. 65, 394.
"	11.231, m. of 4	Playfair and Joule. M. C. S. 3, 68.
"	11.370, 0°	Reich. J. P. C. 78, 328.
"	11.3525, 18°	
"	11.395, 4°	Streng. J. 13, 187.

Name.	Specific Gravity.	Authority.
Lead	11.361, 70°	Mallet. A. J. S. (3), 8, 212.
" Cooled slowly from fusion.	11.254	St. Claire Deville. P. M. (4), 11, 144.
" Cooled quickly from fusion.	11.363	
" Electrolytic	11.542	
" Electrolytic, fused and cooled quickly.	11.225	
"	11.376, 14°	Holzmann. J. 13, 112.
"	11.344, 4° Extremes	Schweitzer. Am. Chem. 7, 174.
"	11.377, 4°	
"	11.335, 0°	Quincke. P. A. 97, 396.
"	11.4	Roberts and Wrightson. Bei. 5, [817.
" Not pressed	11.350, 14°	Spring. Ber. 16, 2724.
" Once "	11.501, 14°	
" Twice "	11.492, 16°	
"	11.359, 0°	Vicentini and Omodei. Bei. 11, 769.
"	11.005, 325°, solid	
"	10.645, 325°, molten	
" Molten	10.509, m. of 3	Playfair and Joule. M. C. S. 3, 74.
" "	11.07	Mallet. A. J. S. (3), 8, 212.
" "	10.37 Two methods	Roberts and Wrightson. Ann. (5), 30, 181.
" "	10.65	
" "	10.952	Quincke. P. A. 135, 642.
Thorium*	7.657	Chydenius. J. 16, 194.
"	7.795	
" Crystallized	11.230	Nilson. Ber. 16, 160. Compare earlier paper, Ber. 15, 2544.
" Non-crystallized	10.968	
Nitrogen. Liquefied	.41 to .44, —23°	Cailletet and Hautefeuille. C. R. 92, 1086.
" "	.37 to .38, 0°	
" "	.4552, —146°.6	Wroblevsky. C. R. 102, 1010.
" "	.5842, —153°.7	
" "	.83, —193°	
" "	.866, —202°	
" "	.859 —194°.4, boiling point.	Olszewski. P. A. (2), 31, 73.
" "	.886	
" "	.891	
" "	.905	
Phosphorus. Common	1.77	Berzelius. See Böttger.
" "	2.09	Böttger. Watts' Dict.
" "	1.800	Playfair and Joule. M. C. S. 3, 69.
" "	1.826 10°	Schrötter. J. 1, 336.
" "	1.840	
" "	1.8262 10°	Kopp. A. C. P. 93, 129.
" "	1.8265	
" "	1.823, 35°	Gladstone and Dale. J. 12, 73.
" "	1.83676, 0°	Pisati and De Franchis. Ber. 8, 70
" "	1.82321, 20°	
" "	1.80681, 44°	
" Red	1.964, 10°	Schrötter. J. 1, 336.
" "	2.089 17°	Schrötter. J. 3, 262.
" "	2.106	
" " Cryst.	2.14	Two preparations. Brodie. J. 5, [330.
" " "	2.23	
" " "	2.34, 15°.5	Hittorf. J. 18, 130.

* Nilson's determinations are the only ones having any present value. Chydenius' work has merely historical interest.

NAME.	SPECIFIC GRAVITY.	AUTHORITY.
Phosphorus. Red. Cryst.	2.34, 0°	Troost and Hautefeuille. Ber. 7, 482.
" "	2.148, 0°, prep. at 265°	
" "	2.19, 0° " 360°	
" "	2.293, 0° " 500°	
" Molten	1.744	Playfair and Joule. M. C. S. 3, 76.
" "	1.88, 45°	Schrötter. J. 1, 336.
" "	1.763	Gladstone and Dale. J. 12, 73.
" "	1.74924, 40°	Boils at 278°.3. Pisati and De Franchis. Ber. 8, 70.
" "	1.6949, 100°	
" "	1.6027, 200°	
" "	1.52867, 280°	
" "	1.4850, at boiling point	Ramsay and Masson. Ber 13, 2147.
" "	1.833	Quincke. P. A. 135, 642.
Vanadium	5.5, 15°	Roscoe. P. T. 1869, 679.
"	5.866 } 15°	Setterberg. Of. Ak. St. 1882, 10, 13.
"	5.875	
Arsenic	5.7633	Brisson. P. des C.
"	5.766	Mohs. See Böttger.
"	5.7633	Stromeyer. " "
"	5.884	Turner.
"	5.700	Guibourt. B. J. 7, 128.
"	5.959	
"	5.672	Herapath. P. M. 64, 321.
"	5.6281	Karsten. Schw. J. 65, 394.
" Native	5.736	Breithaupt. J. P. C. 16, 475.
" "	5.722	Breithaupt. J. P. C. 11, 151.
" "	5.734	
"	5.230	Playfair and Joule. M. C. S. 3, 72.
"	5.395, 12°.5	Ludwig. J. 12, 183.
"	5.726 } 14°	Bettendorff. J. 20, 253.
"	5.728	
" After fusion	5.709, 19°	Mallet. B. S. C. 18, 438.
" Allotropic	4.710 } 14°	Bettendorff. J. 20, 253.
" "	4.716	
" "	4.6 to 4.7	Engel. C. R. 96, 498.
" Compressed	4.91	Spring. Ber. 16, 326.
" Allotropic	3.7002 to 3.7100, 15°	Rückoldt. A. C. P. 240, 215.
Antimony	6.702	Brisson. P. des C.
"	6.712	Hatchett. See Böttger.
"	6.733	Böckmann. " "
"	6.852	Muschenbroek. " "
"	6.860	Bergmann. " "
"	6.646	Mohs. " "
"	6.6101	Breithaupt. " "
"	6.7006	Karsten. Schw. J. 65, 394.
"	6.715	Marchand and Scheerer. J. P. C. 27, 193.
"	6.705, 3°.75, m. of 3	Dexter. P. A. 100, 567.
"	6.6987 } Extremes	
"	6.7102	
"	6.713, 14°	Matthiessen. J. 13, 112.
"	6.697	Schröder. P. A. 107, 113.
"	6.7022, m. of 6	Cooke. Proc. Amer. Acad. 1877
"	6.6957 } Extremes	
"	6.7070	
"	6.620, 0°	Quincke. P. A. 135, 642.
" Not pressed	6.675, 15°.5	Spring. Ber. 16, 2724.
" Once "	6.753, 15°	
" Twice "	6.740, 16°	

Name.	Specific Gravity.	Authority.
Antimony. Amorphous	5.74	Gore. J. 13, 172.
" "	5.83	
" Molten	6.646	Playfair and Joule. M. C. S. 3, 77.
" "	6.529	
" "	6.528	Quincke. P. A. 135, 642.
Bismuth	9.67	Muschenbroek. See Böttger.
"	9.822	Brisson. P. des C.
"	9.800	Leonhard. See Böttger.
"	9.8827	Thénard. " "
"	9.8827	Berzelius.
"	9.831	Herapath. P. M. 64, 321.
"	9.6542	Karsten. Schw. J. 65, 394.
" Pure	9.799, 19°	Marchand and Scheerer. J. P. C. 27, 193.
" Commercial	9.783	
" Compressed	9.556	
" Crystallized	9.935	C. St. Claire Deville. J. 8, 15.
" Quickly cooled from fusion.	9.677	
"	9.823, 12°	Holzmann. J. 13, 112.
"	9.713, m. of 3	Schröder. P. A. 107, 113.
"	9.82	Roberts and Wrightson. Bei. 5, 817.
"	9.819, 0°	Quincke. P. A. 135, 642.
" Not pressed	9.804, 13°.5	Spring. Ber. 16, 2724.
" Once "	9.856, 15°	
" Twice "	9.863, 15°	
"	9.787, 0°.	Vicentini and Omodei. Bei. 11, 769.
"	9.673, 270°.9 s.	
"	10.004, 270°.9 l.	
" Molten	9.798	Playfair and Joule. M. C. S. 3, 75.
" "	10.039	Roberts and Wrightson. By two methods. Nature, 22, 448.
" "	10.055	
" "	9.709	Quincke. P. A. 135, 642.
Columbium. (Niobium)	6.0 to 7.37 *	Marignac. J. 21, 214.
"	7.06, 15°.5	Roscoe. C. N. 37, 26.
Tantalum	10.08 to 10.78	Rose. J. 9, 366.
Oxygen. Liquified	.9787	By two methods. Pictet. Ann. (5), 13, 193.
" "	.9883, m. of 4	
" "	.8402	Pictet, recalculated by Offret. Ann. (5), 19, 271.
" "	.8655	
" "	.58, .65, .70, 0°	Cailletet and Hautefeuille. C. R. 92, 1086.
" "	.84, .88, .89, —23°	
" "	.895	Wroblevsky. C. R. 97, 166.
" "	.899 —130°, m. of 12	Wroblevsky. P. A. (2), 20, 867.
" "	.7555 —129°.57	Olszewski. Ber. 17, ref. 198.
" "	.806 —134°.43	
" "	.877 —139°.3	
" "	1.110 to 1.137 —181°.4, boiling point.	Olszewski. P. A. (2), 31, 73.
" "	.6, —118°	Wroblevsky. C. R. 102, 1010.
"	1.24 —200°	
Sulphur. Roll	1.9907	Brisson. P. des C.

* Probably the hydride, Cb H.

Name.		Specific Gravity.	Authority.
Sulphur.	Roll	1.868	Böckmann. Quoted by Marchand and Scheerer. J. P. C. 24, 129.
"	Flowers	2.086	Gehler.
"	Cryst.	1.898	Fontenelle.
"	From solution	1.927	Bischof.
"	Cryst.	1.989	Breithaupt.
"	Roll	1.9777	Thomson.
"	"	2.0000	
"	Prismatic	2.072	Mohs.
"	Native	2.086	Dumas and Roget.
"	Soft	2.027	Osann.
"	Native	2.05001	Karsten. Schw. J. 65, 394.
"	From fusion	1.9889	
"	Prismatic	1.982	Marchand and Scheerer. J. P. C. 24, 129.
"	Native	2.066	
"	From solution	2.0518	
"	Soft	1.957	
"	Native	2.069	Kopp. A. C. P. 93, 129.
"	Soft	1.919	C. St. Claire Deville. J. 1, 365.
"	"	1.928	
"	Prismatic	1.958	
"	Native	2.070	
"	From solution	2.063	
"	Crystallized	2.010	Playfair and Joule. M. C. S. 3, 79.
"	Flowers	1.913	
"	Waxy	1.921	
"	Native, cryst.	2.0757	Brame. C. R. 35, 748.
"	Soft	1.87 to 1.9319	
"	Amorphous. Yellow.	1.87	Müller. J. 19, 118.
"	Amorphous. Brown.	1.91 —1.93	
"	Crystallized	2.0748, 0°	Pisati. Ber. 7, 361.
"	Insoluble	1.9556, 0°	Spring. Bei. 5, 853.
"	"	1.9496, 20°	
"	"	1.9041, 40°	
"	"	1.9438, 60°	
"	"	1.9559, 80°	
"	"	1.9643, 100°	
"	Cryst. from CS_2	2.0477, 0°	Spring. Bei. 5, 854. From Bulletin de l'Acad. Roy. de Belg. (3), 2, 83–110, 1881.
"	" "	2.0370, 20°	
"	" "	2.0283, 40°	
"	" "	2.0182, 60°	
"	" "	2.0014, 80°	
"	" "	1.9756, 100°	
"	From Sicily	2.0788, 0°	
"	"	2.0688, 20°	
"	"	2.0583, 40°	
"	"	2.0479, 60°	
"	"	2.0373, 80°	
"	"	2.0220, 100°	
"	Lamellæ	2.041 —2.049	Maquenne. Ber. 17, ref. 199.
"	Sicilian	2.06665, 16°.75	Schrauf. Z. K. M. 12, 325.
"	Molten	1.801 Extremes of 5 determinat'ns	Playfair and Joule. M. C. S. 3, 76.
"	"	1.815	
"	"	1.4794, m. of 5	At the boiling point, 446°. Ramsay. J. C. S. 35, 471.
"	"	1.4578 Extremes	
"	"	1.5130	
Selenium		4.3 to 4.32	Berzelius. See Böttger.

Name.	Specific Gravity.	Authority.
Selenium	4.310	Boullay. See Böttger.
"	4.808, 15°	Hittorf. J. 4, 319.
" Cryst. fr. fusion	4.805	Schaffgotsch. J. 6, 329.
" " "	4.796	
" Amorphous	4.276, 20°	
" "	4.286, 20°	
" Precip. Red	4.245	Schaffgotsch. J. 6, 329.
" " "	4.275	
" Precip. after heat'g to 50°.	4.250	
	4.297	
" Crystallized	4.460	Mitscherlich. J. 8, 314.
" "	4.509	
" "	4.700	
" " from solution.	4.760, 15°	
" " "	4.788, 15°	
" Crystallized	4.406, 21°	Neumann. P. A. 126, 138.
" Black	4.80	Rathke. J. P. C. 108, 235.
" "	4.81	
" Precip. Red	4.26	
" " "	4.28	
" Gray	4.495	Rammelsberg. P. A. 152, 154.
" " Granular	4.514	
" Laminated, from alkaline selenides.	4.77	
	4.79	
	4.86	
" Cryst. from CS_2.	4.418	
" " " "	4.54	
" " " "	4.59	
" Amorphous	4.27	
"	4.34	
" Melted	4.29	
" "	4.36	
" Compressed	4.7994, 0°	Spring. Bei. 5, 854. From Bull. de l'Acad. Roy. de Belg. (3), 2, 88–110, 1881.
" "	4.7869, 20°	
" "	4.7699, 40°	
" "	4.7526, 60°	
" "	4.7351, 80°	
" "	4.7167, 100°	
" Uncompressed	4.7312, 0°	
" "	4.7176, 20°	
" "	4.7010, 40°	
" "	4.6826, 60°	
" "	4.6623, 80°	
" "	4.6396, 100°	
" Fused	4.2	Quincke. P. A. 135, 642.
Tellurium	6.115	Klaproth. Ann. 25, 273.
"	6.1379	Magnus. See Böttger.
"	6.2445, m. of 5	Berzelius. P. A. 28, 392.
"	6.180	Löwe. J. P. C. 60, 163.
"	6.343	Reichenstein. See Böttger.
" Compressed	6.2549, 0°	Spring. Bei. 5, 854. From Bull. de l'Acad. Roy. de Belg. (3), 2, 88–110, 1881.
" "	6.2419, 20°	
" "	6.2294, 40°	
" "	6.2170, 60°	
" "	6.2030, 80°	
" "	6.1891, 100°	

Name.	Specific Gravity.	Authority.
Tellurium. Uncompressed.	6.2322, 0°	Spring. Bei. 5, 854. From Bull. de l'Acad. Roy. de Belg. (3), 2, 88–110, 1881.
" "	6.2194, 20°	
" "	6.2052, 40°	
" "	6.1500, 60°	
" "	6.1366, 80°	
" "	6.1640, 100°	
"	6.204	Klein and Morel. Ann. (6), 5, 61.
"	6.215	
Chromium	7.3	Bunsen. Watts' Dict.
" Crystallized	6.81, 25°	Wöhler. J. 12, 169.
" Red. by K Cy	6.20	Loughlin. J. 21, 220.
Molybdenum	8.490	Bucholz. Nich. J. 20, 121.
"	8.615	
"	8.636	
"	8.60	Debray. J. 11, 157.
" Red. by K Cy	8.56	Loughlin. J. 21, 220.
Tungsten	17.60	D'Elhuyart. See Böttger.
"	17.22	Allan and Aiken. " "
"	17.4	Bucholz. Schw. J. 3, 1.
"	16.54	Uslar. J. 8, 372.
"	17.50	
"	18.26	
" Reduced by H	17.1 to 17.3	Bernoulli. J. 13, 152.
" " C	17.9 to 18.12	
"	16.6	Prepared by three methods. Zettnow. J. 20, 218.
"	17.2	
"	18.447, 17°	
"	19.261, 12°	Roscoe. C. N. 25, 61.
"	18.25	Waddell. A. C. J. 8, 287.
"	18.77	
Uranium	18.40	Peligot. J. 9, 380.
"	18.33	Peligot. A. C. P. 149, 128.
"	18.685, 4°, m. of 3	Zimmermann. Ber. 15, 851.
Chlorine. Liquefied	1.33, 15°.5	Faraday. P. T. 1823, 164.
Bromine	2.966	Balard. Ann. (2), 32, 337.
"	2.98 } 15°	Löwig. See Böttger.
"	2.99	
"	3.18718, 0°	Pierre. Ann. (3), 20, 5.
"	3.18828, 0°	Thorpe. J. C. S. 37, 172.
"	2.98218, 59°.27	
"	2.9483, m. of 4	Taken at the boiling point. Ramsay. Ber. 13, 2146.
"	2.9471 } Extremes	
"	2.9503	
"	3.1875, 0°	Van der Plaats. J. C. S. 50, 849.
Iodine	4.948	Gay Lussac. Ann. 91, 5.
" Solid	4.9173, 40°.3	Billet. J. 8, 46.
" "	4.886, 60°	
" "	4.857, 79°.6	
" "	4.841, 89°.8	
" "	4.825, 107°	
" Molten	4.004, 107°	
" "	3.988, 111°.7	
" "	3.944, 124°.3	
" "	3.918, 133°.5	
" "	3.866, 151°	
" "	3.796, 170°	
" Solid	5.030	Playfair. Proc. Roy. Soc. Edin. 4, 241.

Name.	Specific Gravity.	Authority.
Manganese	6.861	Bergmann.
"	7.10	
"	8.03	Bachmann. See Böttger.
"	8.013	John. P. M. 2, 176.
"	7.138	Brunner. J. 10, 202.
"	7.206	
Iron	7.788	Brisson. P. des C.
" Wrought	7.790	Karsten. Schw. J. 65, 394.
" Wire in several different conditions.	7.6305	Baudrimont. J. P. C. 7, 268.
	7.6000	
	7.7169	
	7.7312	
" Hammered	7.7433	
" Bar	7.4839	Bröling. See Percy's Metallurgy.
"	7.8707	Berzelius. " " "
"	7.865	
" Reduced by zinc vapor.	7.50	Poumaréde. J. 2, 281.
	7.84	
" Reduced by C.	7.130	Playfair and Joule. M. C. S. 3, 72.
" Electrolytic	8.1393, 15°.5	Smith. See Percy's Metallurgy.
" Fused in H., not forged.	7.880, 16°	Caron. C. R. 70, 1263.
" Fused in H., forged	7.868, 16°	
" Fused in H., wire	7.847, 16°	
" Fused in crucible	7.833, 16°	
" Good commercial	7.852, 16°	
" Reduced by H.	7.998 } 10°	Schiff.
" "	8.007	
" "	6.03	Stahlschmidt. J. 18, 255.
" Molten	6.88	Roberts and Wrightson. Bei. 5, 817. [6, 145.
" Molten steel	8.05	Petruschewsky and Alexejeff. Bei.
Nickel	7.807	Brisson. P. des C.
"	8.279, cast	Richter. Ann. 53, 164.
"	8.666, forged	
" Cast	8.380 } 12°.5	Tupputi. Ann. 78, 133.
" Forged	8.820	
"	8.932, 12°.5	Tourte. Ann. 71, 103.
"	8.477	Baumgartner. See Böttger.
"	8.713	
"	8.637	Brunner. " "
"	9.000	Bergmann. " "
" Reduced by H.	7.861	Playfair and Joule. M. C. S. 3, 71.
" "	7.803	
" Wire	8.88, 4°	Arndtsen.
" Reduced by H.	8.975	Rammelsberg. J. 2, 282.
" "	9.261	
"	8.900	Schröder. P. A. 107, 113.
Cobalt	8.710	Lampadius. Erd. J. (1), 5, 390.
"	8.485	Brunner. See Böttger.
"	9.152	Gehler. " "
"	8.500	Mitscherlich. " "
"	8.5131	Berzelius. " "
"	8.5384	Haüy and Tassaert. See Böttger.
"	8.558	T. H. Henry. M. C. S. 3, 59.
" Reduced by H.	7.718	Playfair and Joule. M. C. S. 3, 71.
" "	8.260	
" "	8.957, m. of 5	Rammelsberg. J. 2, 282.

Name.	Specific Gravity.	Authority.
Copper	8.895	Hatchett. P. T. 1808, 88.
" Rolled	8.878	Brisson. P. des C.
" Cast	8.788	
" "	8.83	
" Drawn	8.9463	Berzelius. See Böttger.
" Hammered	8.9587	
"	8.78	Kupffer. Ann. (2), 25, 356.
"	8.900	Herapath. P. M. 64, 821.
"	8.721	Karsten. Schw. J. 65. 394.
" Wire in several different conditions.	8.6225 8.3912 8.7059 8.8787	Baudrimont. J. P. C. 7, 287.
" Hammered	8.8893	
" Cast, slowly cooled	8.4525	
" Crystallized	8.940	
" Cast	8.921	
" Various sorts of wire.	8.939 8.949 8.930 8.951	Marchand and Scheerer. J. P. C. [27, 193.
" Sheet	8.952	
" Pressed	8.931	
" Electrolytic	8.914	
"	8.667	Mallet. D. J. 85, 378.
" Finely divided	8.428	
" "	8.483	
" "	8.360	Playfair and Joule. M. C. S. 3, 57.
" Electrolytic	8.884	
" "	8.941	
" "	8.934	
" Finely divided	8.367, 4°	Playfair and Joule. J. C. S. 1, 121.
" "	8.41613, 4°	
" Hammered	8.855	
" "	8.878	
" Rolled	8.879	O'Neill. Memoirs Manchester Philosophical Society, (3), 1, 248.
" "	8.898	
" Annealed	8.884	
" "	8.896	
"	8.902, 12°	Schiff.
" Native	8.838	Whitney. J. 12, 769.
"	8.952	Schröder. P. A. 107, 118.
"	8.958	
" Electrolytic, cast	8.916	
" " "	8.958	Dick. P. M. (4), 11, 409.
" " wire	8.853	
" " "	8.733	
" Plate	8.902, 0°	Quincke. P. A. 97, 396.
"	8.945, 0° (in vacuo)	Hampe. C. C. 6, 379.
"	8.9565, 17°	
"	8.8	Roberts and Wrightson. Bei. 5, [817.
" Allotropic	8.0 to 8.2	Schutzenberger. J. Ph. Ch. (4), 28, 366.
" Molten	7.272	Playfair and Joule. M. C. S. 3, 77.
" "	8.217	Roberts and Wrightson. Bei. 5, 817.
Silver	10.472	Brisson. P. des C.
"	10,362, 10°	Biddle. P. M. 30, 152.

Name.	Specific Gravity.	Authority.
Silver	10.43	Lengsdorf.
"	10.47	
"	10.4282	Karsten. Schw. J. 65, 394.
" Cast, slowly cooled	10.1053	Baudrimont. J. P. C. 7, 287.
" Same mass, rolled	10.5518	
" Hammered	10.4476	
" Brittle	9.8463	
" Granulated	9.6323	
" Cryst. in laminæ	9.5538	
" Wire	10.4913	
"	10.434	Breithaupt. J. P. C. 11, 151.
"	10.482	Karmarsch. J. P. C. 43, 193.
"	10.522	Playfair and Joule. M. C. S. 3, 66.
"	10.537	
" Cast	10.505	G. Rose. P. A. 73, 1.
" Pressed	10.5665	
" Precip. powdery	10.5532	
" " "	10.6191	
"	10.5287, m. of 13	
"	10.5237, m. of 4	
"	10.5283, m. of 8	
"	10.468, 13°	Holzmann. J. 13, 112.
"	10.575	Christomanos. J. 21, 272.
" After heating in vacuo.	10.512	Dumas. C. N. 37, 82.
"	10.412, 4°	Zimmermann. Ber. 15, 850.
"	10.57	Roberts. C. N. 31, 143.
"	10.621, 0°	Quincke. P. A. 135, 642.
" Molten	9.131	Playfair and Joule. M. C. S. 3, 78.
" "	9.281	
" "	9.4612	Roberts. C. N. 31, 143.
" "	9.51 Two methods	Roberts and Wrightson. Ann. (5), 30, 181.
" "	9.40	
" "	10.002	Quincke. P. A. 135, 642.
Gold	19.258	Brisson. P. des C.
" Hammered	19.207	Elliot. Quoted by Rose.
"	19.3 to 19.4	Lewis. " " "
" Pressed	19.3336, 17°.5	G. Rose. P. A. 73, 1.
" Ppt. by oxalic acid	19.2981, 17°.5	
" Cast and pressed, 16 samples differently prepared.	19.2881, 17°.5, m. of 37	
	19.2689, 17°.5 Extremes.	
	19.3296, 17°.5	
" Ppt. by oxalic acid	19.4941	G. Rose. P. A. 75, 403.
"	19.265, 13°	Holzmann. J. 13, 112.
" Before rolling	19.2945	Roberts and Rigg. J. C. S. (2), 12, 203.
" Once rolled	19.2982	
" Molten	17.099	Quincke. P. A. 135, 642.
Ruthenium	11.0	Deville and Debray. J. 12, 234.
"	11.4	
"	12.261, 0°	Deville and Debray. C. R. 83, 928.
Rhodium	11.0+	Wollaston. P. T. 1804, 426.
"	11.2	Cloud. Schw. J. 43, 316.
"	11.0	Hare. A. J. S. (2), 2, 365.
"	12.1	Deville and Debray. J. 12, 240.
Palladium	11.3	Wollaston. See Böttger.
"	11.8	
"	12.148	Lowry. " "
"	11.852	Lampadius. Watts' Dict.

Name.	Specific Gravity.	Authority.
Palladium	11.8	Vauquelin. Ann. 88, 167.
"	11.041, 18°	Cloud. Schw. J. 1, 362.
"	10.923	Breithaupt. See Böttger.
"	11.628	Benneke and Reinecker. See Böttger.
"	11.30	Cock. M. C. S. 1, 161.
" Hammered	11.80	
"	11.752	Breithaupt. J. P. C. 11, 151.
"	11.4, 22°.5	Deville and Debray. J. 12, 237.
"	12.0	Troost and Hautefeuille. C. R. 78, 970.
"	12.104	Lisenko. Ber. 5, 29.
" Molten	10.8	Quincke. P. A. 135, 642.
Osmium	21.40	Deville and Debray. J. 12, 232.
"	22.477	Deville and Debray. C. R. 82, 1076.
Iridium. Porous globule	18.680	Children. See Böttger.
"	21.78	Eckfeldt and Boyé, for Hare. A. J. S. (2), 365.
"	21.83	
" Black	18.6088	G. Rose. P. A. 75, 403.
"	21.15	Deville and Debray. J. 12, 242.
"	22.421, 17°.5	Deville and Debray. P. M. (4), 50, 561.
"	22.38	Matthey. C. N. 40, 240.
Platinum	20.85	Borda. Quoted by Marchand. J. P. C. 33, 385.
"	20.98	
"	21.06	
" Cast	19.5	Brisson. P. des C.
" Hammered	20.3	
" Wire	21.0	
" "	21.7	Klaproth. Quoted by Marchand.
"	21.061	Sickingen. " " "
"	21.45	Berzelius. " " "
"	21.47	Berthier. " " "
"	21.53	
" Cast	17.7	Prechtl. " " "
"	21.3	Faraday. " " "
" Hammered	20.9	E. D. Clarke. " " "
" Spongy	21.47	Thomson. " " "
"	21.343	Scholz. See Böttger.
"	21.359	Meissner. " "
" Wire	21.16	Wollaston. P. A. 16, 158.
" "	21.40	
" "	21.53	
" Hammered	21.25	
" Spongy	17.572	Liebig. P. A. 17, 101.
" "	15.780	
" "	16.319	
" Black	17.894	Scholz. See Böttger.
"	21.2668 } 0°	Marchand. J. P. C. 33, 385.
"	21.3092	
" Hammered	21.31	Hare. A. J. S. (2), 2, 365.
" "	21.16	
" "	21.23	
" Spongy	16.634	Rose. P. A. 75, 403.
" Precip. black	20.9815	
" " "	20.7732	
" " "	22.8926	

Name.	Specific Gravity.	Authority.
Platinum. Precip. black	22.0345	Rose. P. A. 75, 403.
" Black	26.1418, 15°.7 ?	
" "	17.766	Playfair and Joule. M. C. S. 3, 57.
" Spongy	21.169	
" "	21.243	
"	21.15	Deville and Caron. J. 10, 259.
"	21.15	Deville and Debray. J. 12, 240.
" Very pure	21.504, 17°.6	Deville and Debray. P. M. (4), 50, 560.
" Molten	18.915	Quincke. P. A. 135, 642.

II. INORGANIC FLUORIDES.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen fluoride or hydrofluoric acid, liquid.	HF	1.0609	Davy. P. T. 1813, 263.
" "	"	.9922, 11°	Gore. P. T. 1869, 173.
" "	"	.9879, 12°.7	
" "	"	.9885, 13°.6	
" "	"	1.036, 15°.5	
Lithium fluoride	LiF	2.582	Schröder. Dm. 1873.
" "	"	2.608	
" "	"	2.612	
" "	"	2.295, 21°.5	Clarke. A. J. S. (3), 13, 292.
Sodium fluoride	NaF	2.713, m. of 7	Schröder. Dm. 1873.
" "	"	2.601 Extremes	
" "	"	2.772	
" "	"	2.558, 14°.5	Clarke. A. J. S. (3), 13, 292.
Potassium fluoride	KF	2.454, 12°	Bödeker. B. D. Z.
" "	"	2.459	Schröder. Dm. 1873.
" "	"	2.476	
" "	"	2.507	
" "	"	2.096, 21°.5	Clarke. A. J. S. (3), 13, 292.
" "	"	2.350, m. of 3	Schröder. Ber. 11, 2018.
Rubidium fluoride	RbF	3.202, 16°.5	Clarke. A. J. S. (3), 13, 293.
Ammonium hydrogen fluoride.	$AmHF_2$	1.211, 12°	Bödeker. B. D. Z.
Silver fluoride	AgF	5.852, 15°.5	Gore. C. N. 21, 28.
Magnesium fluoride	MgF_2	2.472	Schröder. Dm. 1873.
" "	"	2.856, 12°	Cossa. Ber. 10, 295.
" " Sellaite.	"	2.972	Strüver. Dana's Min., 2d App.
Zinc fluoride	ZnF_2	4.612, 12°	Clarke. A. J. S. (3), 13, 291.
" "	"	4,556, 17°	
" "	$ZnF_2 . 4H_2O$	2.567, 10°	
" "	" "	2.585, 12°	

Name.	Formula.	Sp. Gravity.	Authority.
Cadmium fluoride	$Cd\ F_2$	5.994, 22°, m. of 7.	Kebler. A. C. J. 5, 241.
Calcium fluoride	$Ca\ F_2$	3.183, m. of 60	Kenngott. J. 6, 853.
" "	"	3.150	Smith. J. 8, 976.
" "	"	3.138	Schiff. A. C. P. 108, 21.
" "	"	3.162	Luca. J. 13, 98.
" " Precip.	"	3.086	Schröder. Dm. 1873.
" " Ignited	"	3.150	
Strontium fluoride	$Sr\ F_2$	4.202	" "
" "	"	4.236	
" "	"	4.210	Schröder. P. A. 6 Erganz. Bd. 622.
Barium fluoride	$Ba\ F_2$	4.58, 13°	Bödeker. B. D. Z.
" "	"	4.824	Schröder. Dm. 1873.
" "	"	4.833	
Lead fluoride	$Pb\ F_2$	8.241	" "
Nickel fluoride	$Ni\ F^2$	2.855, 14°	Clarke. A. J. S. (3), 13, 291.
" "	$Ni\ F_2 .\ 3\ H_2\ O$	2.014, 19°	
Aluminum fluoride	$Al\ F_3$	3.065, 12°	Bödeker. B. D. Z.
" "	"	3.13, 12°	
Arsenic trifluoride, l	$As\ F_3$	2.73	Unverdorben. P. A. 7, 316.
" "	"	2.66	MacIvor. C. N. 30, 169.
" "	"	2.6659, 0°	Thorpe. J. C. S. 37, 372. [874.
" "	"	2.4497, 60°.4	
" "	"	2.734	Moissan. C. R. 99,
Bismuth fluoride	$Bi\ F_3$	5.32, 20°	Gott and Muir. J. C. S. 53, 137.
" oxyfluoride	$Bi\ O\ F$	7.5, 20°	
Cryolite. Greenland	$Na_3\ Al\ F_6$	2.9—3.077	Dana's Mineralogy.
" Siberia	"	2.95	Durnew. J. 4, 820.
" Colorado	"	2.972, 24°	Hillebrand and Cross. A. J. S. (3), 26, 271.
Chiolite	$Na_5\ Al_3\ F_{14}$	2.72	Hermann. J. P. C. 37, 188.
"	"	2.90	Kokscharow. J. 4, 820.
"	"	2.842—2.898	Rammelsberg. P. A. 74, 314.
Chodneffite	$Na_2\ Al\ F_5$	3.003	Rammelsberg. P. A. 74, 314.
"	"	3.077	
"	"	2.62—2.77	Wörth. Dana's Mineralogy.
Pachnolite.* Colorado	$Na\ Ca\ Al\ F_6 .\ H_2\ O$	2.965, 17°, m. of 4.	Hillebrand and Cross. A. J. S. (3), 26, 271.
" "	"	2.962, 22°	
Prosopite. Altenberg	$Ca\ Al_2\ (F.\ O\ H)_8$	2.890	Scheerer. Dana's Mineralogy.
" "	"	2.898	
" Colorado	"	2.880, 23°	Hillebrand and Cross. A. J. S. (3), 26, 271.
Ralstonite	$Na\ Mg\ Al_4 F_{15} .\ 3 H_2 O.$	2.4	Brush. A. J. S. (3), 2, 30.

*According to Brandl, pachnolite and thomsenolite are distinct species, but Hillebrand and Cross show them to be identical.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ralstonite	$NaMgAl_4F_{15}.3H_2O$.	2.62	Nordenskiöld. Dana's Min., 3d App.
"	$(MgNa_2)Al_3(F.OH)_{11}$ $2H_2O$.	2.560	Penfield and Harper. A. J. S. (3), 32, 381.
Fluocerite	$Ce F_3$, ?	4.7	Berzelius. Dana's Mineralogy.
Tysonite	$4 Ce F_3$. $3 La F_3$	6.13, in mean	Allen and Comstock. A. J. S. (3), 19, 391.
Yttrocerite	?	3.447	Berzelius. Dana's Mineralogy.
Potassium borofluoride	$K B F_4$	2.5	Stolba. B. S. C. 18, 309.
" "	"	2.6	
Lithium silicofluoride	$Li_2 Si F_6$. $2 H_2 O$	2.33	Stolba. J. 17, 213.
" "	"	2.244	Topsoë. C. C. 4, 76.
Sodium silicofluoride	$Na_2 Si F_6$	2.7547, 17°.5	Stolba. J. P. C. 97, 503.
" "	"	2.680, m. of 4	Schröder. Dm. 1873.
" "	"	2.671 Extremes	
" "	"	2.691 Extremes	
Potassium silicofluoride	$K_2 Si F_6$	2.6655, 17°.5	Stolba. J. P. C. 97, 503.
" "	"	2.6649, 17°.5	
" "	"	2.655	Schröder. Dm. 1873.
" "	"	2.698	
" "	"	2.704	
Rubidium silicofluoride	$Rb_2 Si F_6$	3.3383, 20°	Stolba. J. 20, 186.
Cæsium silicofluoride	$Cs_2 Si F_6$	3.3756, 17°	Preis. J. 21, 195.
Ammonium silicofluoride	$Am_2 Si F_6$	1.970	Topsoë. C. C. 4, 76.
" "	"	2.056, m. of 5	Schröder. Dm. 1873.
" "	"	2.035 Extremes	
" "	"	2.071 Extremes	
Calcium silicofluoride	$Ca Si F_6$. ?	2.649, 17°.5	Stolba. J. 33, 239.
" "	"	2.675, 17°.5	
" "	$Ca Si F_6$. $2 H_2 O$	2.254	Topsoë. C. C. 4, 76.
Strontium silicofluoride	$Sr Si F_6$. $2 H_2 O$	2.988	Stolba. J. 34, 285.
" "	" "	2.999	
Barium silicofluoride	$Ba Si F_6$	4.2794, 21°	Stolba. J. 18, 170.
" "	"	4.2380, 22°	Schweitzer. Univ. of Missouri, special pub. 1876.
Magnesium silicofluoride	$Mg Si F_6$. $6 H_2 O$	1.761	Topsoë. C. C. 4, 76.
Zinc silicofluoride	$Zn Si F_6$. $6 H_2 O$	2.104	
" "	" "	2.121, 17°.5	Stolba. J. R. C. 5, 72.
" "	" "	2.1448, 17°.5	
Manganese silicofluoride	$Mn Si F_6$. $6 H_2 O$	1.858	Topsoë. C. C. 4, 76.
Iron silicofluoride*	$Fe Si F_6$. $6 H_2 O$	1.96115, 17°.5	Stolba. B. S. C. 26, 155.
Nickel silicofluoride	$Ni Si F_6$. $6 H_2 O$	2.109	Topsoë. C. C. 4, 76.
Cobalt silicofluoride *	$Co Si F_6$. $6 H_2 O$	2.067	
" "	" "	2.1211, 19°	Stolba. B. S. C. 26, 155.
" "	" "	2.1135, 19°	
Copper silicofluoride*	$Cu Si F_6$. $4 H_2 O$	2.535	Topsoë. C. C. 4, 76.
" "	$Cu Si F_6$. $6 H_2 O$	2.1576, 19°	Stolba. J. 20, 299.
" "	" "	2.207	Topsoë. C. C. 4, 76.
" "	" "	2.182	Topsoë and Christiansen.

*According to Stolba, these salts contain 6½ molecules of water.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium titanofluoride	$K_2 Ti F_6$	2.0797, 12°	Bödeker. B. D. Z.
" "	$K_2 Ti F_6 . H_2 O$	2.992	Topsoë. C. C. 4, 76.
Copper titanofluoride	$Cu Ti F_6 . 4 H_2 O$	2.529	" "
Potassium zircofluoride	$K_2 Zr F_6$	3.582	" "
Zinc zircofluoride	$Zn Zr F_6 . 6 H_2 O$	2.255	" "
Nickel zircofluoride	$Ni Zr F_6 . 6 H_2 O$	2.227	" "
Potassium stannifluoride	$K_2 Sn F_6 . H_2 O$	3.053	" "
Ammonium stannifluoride	$Am_2 Sn F_6$	2.887	" "
Manganese stannifluoride.	$Mn Sn F_6 . 6 H_2 O$.	2.307	" "
Cobalt stannifluoride	$Co Sn F_6 . 6 H_2 O$	2.604	" "
Potassium columboxyfluoride.	$K_2 Cb O F_5 . H_2 O$	2.813	" "
Copper columboxyfluoride	$Cu Cb O F_5 . 4 H_2 O$	2.750	" "
Potassium tantalofluoride.	$K_2 Ta F_7$	4.056	" "
Potassium uranoxyfluoride	$3 K F . U O_2 F_2$	4.263, 20°	Baker. J. C. S. 35, 760.
" "	$5 K F . 2 U O_2 F_2$	4.379, 20°	" "
" "	$3 K F . 2 U O_2 F_2 . 2 H_2 O$.	4.108, 20°	" "
Ammonium uranoxyfluoride.	$3 Am F . U O_2 F_2$	3.186, 20°	" "

III. INORGANIC CHLORIDES.

1st. Simple Chlorides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen chloride or hydrochloric acid, liquef'd	$H Cl$	.908, 0°	Ansdell. C. N. 41, 76. Critical temperature, 51°.25.
" "	"	.873, 7°.5	
" "	"	.854, 11°.7	
" "	"	.835, 15°.8	
" "	"	.808, 22°.7	
" "	"	.748, 33°	
" "	"	.678, 41°.6	
" "	"	.619, 47°.8	
Lithium chloride	$Li Cl$	1.998	Kremers. J. 10, 67.
" "	"	2.074	Schröder. P. A. 107, 113.
" " Fused	"	1.515	Quincke. P. A. 138, 141.
Sodium chloride	$Na Cl$	2.2001	Hassenfratz. Ann. 28, 3.
" "	"	2.15	Leslie. See Böttger.
" "	"	2.26	Mohs.
" "	"	2.078	Karsten. Schw. J. 65, 394.
" "	"	2.030	Unger. See Böttger.
" "	"	2.150	Kopp. A. C. P. 36, 1.
" "	"	2.011, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.24	Filhol. Ann. (3), 21, 415.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium chloride	Na Cl	2.155, 15°.5	Holker. P. M. (3), 27, 213.
" " Cryst.	"	2.195	Deville. J. 8, 15.
" " After fusion.	"	2.204	
" "	"	2.142	Grassi. J. 1, 39.
" "	"	2.207	
" " Halite	"	2.135	Hunt. J. 8, 976.
" "	"	2.148	Schiff. A. C. P. 108, 21.
" "	"	2.153	Schröder. P. A. 106, 226.
" "	"	2.161	
" "	"	2.145	Buignet. J. 15, 14.
" "	"	2.1629, 15°	Stolba. J. P. C. 97, 503.
" "	"	2.1543	Haagen. P. A. 131, 117.
" "	"	2.06—2.08	Page and Keightley. J. C. S. (2), 10, 566.
" "	"	2.145	Stas.
" " Natural	"	2.137	Rüdorff. Ber. 12, 251.
" "	"	2.1641, 15°	Bedson and Williams. Ber. 14, 2552.
" " Cryst. at 20°.	"	2.16171	Nicol. P. M. (5), 15, 94.
" " Cryst. at 108°.	"	2.15494	
" "	"	1.612, at the melting point.	Braun. J. C. S. (2), 13, 31.
" "	"	2.23	Brügelmann. Ber. 17, 2359.
" "	"	2.1653, 10°	Andreae. J. P. C. (2), 30, 315.
" "	"	2.1615, 20°	
" "	"	2.1594, 30°	
" "	"	2.15665, 40°	
" "	"	2.15435, 50°	
" "	"	2.1881	Zehnder. P. A. (2), 29, 259.
" "	"	2.1887	
" "	"	2.092, 0°	Quincke. P. A. 135, 642.
" " Fused	"	2.04	
Potassium chloride	K Cl	1.9367	Hassenfratz. Ann. 28, 3.
" "	"	1.836	Kirwan. See Böttger.
" "	"	1.9153	Karsten. Schw. J. 65, 394.
" "	"	1.945	Kopp. A. C. P. 36, 1.
" "	"	1.900	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.97756, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	1.994	Filhol. Ann. (3), 21, 415.
" "	"	1.995	Schiff. A. C. P. 108, 21.
" "	"	1.918, 15°.5	Holker. P. M. (3), 27, 213.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium chloride	K Cl	1.995	Schröder. P. A. 106, 226.
" "	"	1.986	Buignet. J. 14, 15.
" "	"	1.94526, 15°	Stolba. J. P. C. 97, 503.
" "	"	1.90—1.91	Page and Keightley. J. C. S. (2), 10, 566.
" "	"	1.612, at the melting p't.	Braun. J. C. S. (2), 13, 31.
" " Not pressed.	"	1.980, 22°	Spring. Ber. 16, 2724.
" " Once pressed.	"	2.071, 20°	
" Twice pressed.	"	2.068, 21°	
" "	"	1.93	Brügelmann. Ber. 17, 2359.
" "	"	1.932, 0°	Quincke. P. A. 135, 642.
" " Fused	"	1.870	
Rubidium chloride	Rb Cl	2.807	Setterberg. Of. Ak. St. 1882, 6, 23.
Cæsium chloride	Cs Cl	3.992	" "
Ammonium chloride	Am Cl	1.450	Wattson. See Böttger.
" "	"	1.54425	Hassenfratz. Ann. 28, 3.
" "	"	1.528	Mohs. See Böttger.
" "	"	1.578, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.5333, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	1.52, 15°.5	Holker. P. M. (3), 27, 214.
" "	"	1.500	Kopp. A. C. P. 36, 1.
" "	"	1.522	Schiff. A. C. P. 108, 21.
" "	"	1.550	Buignet. J. 14, 15.
" "	"	1.5033, 15°	Stolba. J. P. C. 97, 503.
" "	"	1.5191, 15°	
" "	"	1.5209, 15°	
" "	"	1.456	W. C. Smith. Am. J. P. 53, 145.
Silver chloride	Ag Cl	5.4548	Proust.
" " Unfused	"	5.501	Karsten. Schw. J. 65, 394.
" " Black'd	"	5.5671	
" " After fusion.	"	5.4582	
" "	"	5.129	Herapath. P. M. 64, 321.
" "	"	5.548	Boullay. Ann. (2), 48, 266.
" "	"	5.55	Gmelin.
" " Native	"	5.31	Domeyko. Dana's Min.
" " "	"	5.43	
" "	"	5.517	Schiff. A. C. P. 108, 21.
" "	"	5.5943	Schröder. P. A. 106, [226.

Name.	Formula.	Sp. Gravity.	Authority.
Silver chloride	Ag Cl	5.505, 0°	Rodwell. P. T. 1882, 1125.
" " Molten	"	4.919, 451°	
" " "	"	5.5	Quincke. P. A. 135, 642.
" " "	"	5.3	Quincke. P. A. 138, 141.
Thallium chloride	Tl Cl	7.00	Willm.
" "	"	7.02	Lamy. J. 15, 184.
Thallium trichloride	$Tl_2\ Cl_3$	5.9	" "
Magnesium chloride	$Mg\ Cl_2$	2.177, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	$Mg\ Cl_2 . 6\ H_2O$	1.562, m. of 4	" "
" "	"	1.558	Filhol. Ann. (3), 21, 415.
" " Bischofite.	"	1.65	Ochsenius. B. S. M. 1, 128.
Zinc chloride	$Zn\ Cl_2$	2.753, 13°	Bödeker. B. D. Z.
Cadmium chloride	$Cd\ Cl_2$	3.6254, 12°	" "
" "	"	3.655, 16°.9	P. Knight. F.W.C.
" "	$Cd\ Cl_2 . 2\ H_2O$	3,324, m. of 3	W. Knight. F.W.C.
Mercurous chloride	Hg Cl	7.1758	Hassenfratz. Ann. 28, 3.
" "	"	7.14	Boullay. Ann. (2), 43, 266.
" "	"	6.9925	Karsten. Schw. J. 65, 394.
" "	"	6.7107	Herapath. P. M. 64, 321.
" " Native.	"	6.482	Haidinger. Dana's Min.
" "	"	7.178	Playfair and Joule. M. C. S. 2, 401.
" "	"	6.56	Schiff. A. C. P. 108, 21.
Mercuric chloride	$Hg\ Cl_2$	5.1398	Hassenfratz. Ann. 28, 3.
" "	"	5.14	Gmelin.
" "	"	5.42	Boullay. Ann. (2), 43, 266.
" "	"	5.4032	Karsten. Schw. J. 65, 394.
" "	"	6.223	Playfair and Joule. M. C. S. 2, 401.
" "	"	5.448, m. of 3	Schröder. P. A. 107, 113.
Calcium chloride	$Ca\ Cl_2$	2.214	Boullay. Ann. (2), 43, 266.
" "	"	2.269	
" "	"	2.0401	Karsten. Schw. J. 65, 394.
" "	"	2.480	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.240	Filhol. Ann. (3). 21, 415.
" "	"	2.205	Schiff. A. C. P. 108, [21.
" "	"	2.160, 27°	Favre and Valson. C. R. 77, 579.
" "	"	2.219, 0°	Quincke. P. A. 135, 642.
" " Fused	"	2.15	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Calcium chloride. Fused	$Ca\,Cl_2$	2.120	Quincke. P. A. 138, 141.
" "	$Ca\,Cl_2.\ 6\ H_2O$	1.680, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.635	Filhol. Ann. (3), 21, 415.
" "	"	1.612, 10°	Kopp. J. 8, 44.
" "	"	1.701, 17°.1	Favre and Valson. C. R. 77, 579.
" "	"	1.654, m. of 4	Schröder. Dm. 1878.
" "	"	1.642 } Extremes	Schröder. Dm. 1878.
" "	"	1.671 } Extremes	Schröder. Dm. 1878.
Strontium chloride	$Sr\,Cl_2$	2.8033	Karsten. Schw. J. 65, 394.
" "	"	2.960	Filhol. Ann. (3), 21, 415.
" "	"	3.035, 17°.2	Favre and Valson. C. R. 77, 579.
" "	"	3.054	Schröder. A. C. P. 174, 249.
" "	"	2.770, at the melting point.	Braun. J. C. S. (2), 13, 31.
" " Fused	"	2.770	Quincke. P. A. 138, 141.
" "	$Sr\,Cl_2.\ 6\ H_2O$	2.015, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.603	Filhol. Ann. (3), 21, 415.
" "	"	1.921	Buignet. J. 14, 15.
" "	"	1.932, 17°.2	Favre and Valson. C. R. 77, 579.
" "	"	1.954	Schröder. Dm. 1873.
" "	"	1.964, 16°.7	Mühlberg. F. W. C.
Barium chloride	$Ba\,Cl_2$	3.860	Boullay. Ann. (2), 43, 266.
" "	"	4.156	Boullay. Ann. (2), 43, 266.
" "	"	3.8	Richter. Watts' Dict.
" "	"	3.7037	Karsten. Schw. J. 65, 394.
" "	"	3.750	Filhol. Ann. (3), 21, 415.
" "	"	3.820	Schiff. A. C. P. 108, 21.
" "	"	3.872	Schröder. P. A. 107, 113.
" "	"	3.886	Schröder. P. A. 107, 113.
" "	"	3.7, 17°.5	Kremers. P. A. 85, 42.
" "	"	3.844, 16°.8	Favre and Valson. C. R. 77, 579.
" "	"	3.92	Brügelmann. Ber. 17, 2359.
" " Molten	"	3.700	Quincke. P. A. 138, 141.
" "	$Ba\,Cl_2.\ 2\ H_2O$	3.144, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.664	Filhol. Ann. (3), 21, 415.
" "	"	3,05435, 4°	Playfair and Joule. J. C. S. 1, 137.

Name.	Formula.	Sp. Gravity.	Authority.
Barium chloride	$Ba Cl_2 . 2 H_2 O$	3.052	Schiff. A. C. P. 108, 21.
" "	"	3.081	Buignet. J. 14, 15.
" "	"	3.054, 15°.5	Favre and Valson. C. R. 77, 579.
" "	"	3.045	Schröder. Dm. 1873.
Lead chloride	$Pb Cl_2$	5.29	Monro.
" " Native	"	5.238	Dana's Min.
" " Unfused	"	5.8022	Karsten. Schw. J. 65, 394.
" " After fusion	"	5.6824	
" " Cryst.	"	5.802	Schabus. J. 3. 322.
" "	"	5.78	Schiff. J. 11, 11.
" "	"	5.80534, 15°	Stolba. J. P. C. 97, 503.
" "	"	5.88	Brügelmann. Ber. 17, 2359.
Chromous chloride	$Cr Cl_2$	2.751, 14°	Grabfield. F. W. C.
Chromic chloride	$Cr_2 Cl_6$	3.03, 17°	Schafarik. J. P. C. 90, 12.
" "	"	2.757, 15°, m. of 13.	Grabfield. F. W. C.
Manganous chloride	$Mn Cl_2$	2.478	Schröder. A. C. P. 174, 249.
" "	$Mn Cl_2 . 4 H_2 O$	1.898	
" "	"	1.913	Schröder. Dm. 1873.
" "	"	1.928	
" "	"	2.01, 10°	Bödeker. B. D. Z.
Ferrous chloride	$Fe Cl_2$	2.528	Filhol. Ann. (3), 21, 415.
" "	"	2.988, 17°.9	Grabfield. F. W. C.
" "	$Fe Cl_2 . 4 H_2 O$	1.926	Filhol. Ann. (3), 21. 415.
" "	"	1.937	Schabus. J. 3, 327.
Ferric chloride	$Fe_2 Cl_6$	2.804, 10°.8	Grabfield. F. W. C.
Nickel chloride	$Ni Cl_2$	2.56	Schiff. A. C. P. 108, 21.
Cobalt chloride	$Co Cl_2$	2.937, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	$Co Cl_2 . 6 H_2 O$	1.84, 13°	Bödeker and Ehlers. B. D. Z.
Cuprous chloride	$Cu Cl$	3.6777	Karsten. Schw. J. 65, 394.
" "	"	3.376	Playfair and Joule. M. C. S. 2, 401.
" " Nantoquite	"	3.930	Breithaupt. J. 25, 1145.
Cupric chloride	$Cu Cl_2$	3.054	Playfair and Joule. M. C. S. 2, 401.
" "	$Cu Cl_2 . 2 H_2 O$	2.535, m. of 2	" "
" "	"	2.47, 18°	Bödeker. B. D. Z.
Boron trichloride, l	$B Cl_3$	1.35	Wöhler and Deville. J. 10, 931.
Gallium chloride. Molten	$Ga Cl_3$	2.36, 80°	Boisbaudran. C. N. 44, 166.
Cerium chloride	$Ce Cl_3$	3.88, 15°.5	Robinson. C. N. 50, 251.
Didymium chloride	$Di Cl_3 . 6 H_2 O$	2.286, 15°.8	Cleve. U. N. A. 1885.
" "	"	2.287, 15°.8	

Name.	Formula.	Sp. Gravity.	Authority.
Samarium chloride	$Sm\,Cl_3.\,6\,H_2O$	2.375, 15°	Cleve. U. N. A. 1885.
" "	"	2.392, 15°	Cleve. U. N. A. 1885.
Carbon chloride.*			
Silicon tetrachloride	$Si\,Cl_4$	1.52371, 0°	Pierre. Ann. (3), 20, 26.
" "	"	1.5083, 5°–10°	Regnault. P. A. 62, 50.
" "	"	1.4983, 10°–15°	Regnault. P. A. 62, 50.
" "	"	1.4884, 15°–20°	Regnault. P. A. 62, 50.
" "	"	1.4878, 20°	Haagen. P. A. 131, 117.
" "	"	1.49276	Mendelejeff. C. R. 51, 97.
" "	"	1.522, 0°	Friedel and Crafts. A. J. S. (2), 43, 162.
" "	"	1.52408, 0°	Thorpe. J. C. S. 37, 372.
" "	"	1.40294, 57°.57	Thorpe. J. C. S. 37, 372.
Silicon hexchloride	$Si_2\,Cl_6$	1.58, 0°	Troost and Hautefeuille. Z. C. 14, 331.
Titanium tetrachloride	$Ti\,Cl_4$	1.76088, 0°	Pierre. Ann. (3), 20, 21.
" "	"	1.7487, 5°–10°	Regnault. P. A. 62, 50.
" "	"	1.7403, 10°–15°	Regnault. P. A. 62, 50.
" "	"	1.7322, 15°–20°	Regnault. P. A. 62, 50.
" "	"	1.76041, 0°	Thorpe. J. C. S. 37, 371.
" "	"	1.52223, 136°.41	Thorpe. J. C. S. 37, 371.
Germanium tetrachloride	$Ge\,Cl_4$	1.887, 18°	Winkler. Ber. 19, ref. 655.
Tin dichloride	$Sn\,Cl_2.\ 2\,H_2O$	2.759	Playfair and Joule. M. C. S. 2, 401.
" "	" "	2.71, 15°.5, s	Penny. J. C. S. 4, 239.
" "	" "	2.5876, 37°.7, l	Penny. J. C. S. 4, 239.
" "	" "	2.634, 24°	Bishop. F. W. C.
Tin tetrachloride	$Sn\,Cl_4$	2.26712, 0°	Pierre. Ann. (3), 20, 19.
" "	"	2.2618, 5°–10°	Regnault. P. A. 62, 50.
" "	"	2.2492, 10°–15°	Regnault. P. A. 62, 50.
" "	"	2.2368, 15°–20°	Regnault. P. A. 62, 50.
" "	"	2.234, 15°	Gerlach. J. 18, 237.
" "	"	2.2328, 20°	Haagen. P. A. 131, 117.
" "	"	2.27875, 0°	Thorpe. J. C. S. 37, 372.
" "	"	1.97813, 113°.89	Thorpe. J. C. S. 37, 372.
Nitrogen trichloride	$N\,Cl_3$. ?	1.653	Watts' Dictionary.
Phosphorus trichloride	$P\,Cl_3$	1.45	Davy. Watts' Dict.
" "	"	1.61616, 0°	Pierre. Ann. (3), 20, 9.
" "	"	1.6091, 5°–10°	Regnault. P. A. 62, 50.
" "	"	1.6001, 10°–15°	Regnault. P. A. 62, 50.
" "	"	1.5911, 15°–20°	Regnault. P. A. 62, 50.
" "	"	1.6119, 0°, m. of 2.	Buff. A. C. P. 4 Supp. Bd. 129. Boiling point, 76°.
" "	"	1.59708, 10°	Buff. A. C. P. 4 Supp. Bd. 129. Boiling point, 76°.
" "	"	1.47124, 76°	Buff. A. C. P. 4 Supp. Bd. 129. Boiling point, 76°.

* The chlorides, bromides, and iodides of carbon are assigned to a special division among organic compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phosphorus trichloride	$P\,Cl_3$	1.5774, 20°	Haagen. P. A. 131, 117.
" "	"	1.61275, 0°	Thorpe. J. C. S. 37, 372.
" "	"	1.46845, 75°.95	
Vanadium dichloride	$V\,Cl_2$	3.23, 18°, s	Roscoe. P. T. 1869, 679.
Vanadium trichloride	$V\,Cl_3$	3.00, 18°, s	" "
Vanadium tetrachloride	$V\,Cl_4$	1.8584, 0°	" "
" "	"	1.8363, 8°	
" "	"	1.8159, 32°	[15.
Arsenic trichloride	$As\,Cl_3$	2.20495, 0°	Pierre. Ann. (3), 20,
" "	"	2.1766	Penny and Wallace. J. 5, 382.
" "	"	2.1668, 20°	Haagen. P. A. 131, 117.
" "	"	2.20500, 0°	Thorpe. J. C. S. 37, 372.
" "	"	1.91813, 130°.21	
Antimony trichloride	$Sb\,Cl_3$	3.064, 26°, s	Cooke. Proc. Amer. Acad. 1877.
" "	"	2.6766 liquid at 73°.2	Kopp. A. C. P. 95, 348.
" "	"	2.6758	
" "	"	2.6750	
Antimony pentachloride	$Sb\,Cl_5$	2.3461, 20°	Haagen. P. A. 131. 117.
Bismuth trichloride	$Bi\,Cl_3$	4.56, 11°	Bödeker. B. D. Z.
Sulphur chloride	$S_2\,Cl_2$	1.687	Dumas. Ann. (2), 49, 204.
" "	"	1.686	Marchand. J. P. C. 22, 507.
" "	"	1.6970, 5°–10°	Regnault. P. A. 62, 50.
" "	"	1.6882, 10°–15°	
" "	"	1.6793, 15°–20°	
" "	"	1.7055, 0°	Kopp. A. C. P. 95, 355.
" "	"	1.6802, 16°.7	
" "	"	1.6828, 20°	Haagen. P. A. 131, 117.
" "	"	1.4848, 138°	Ramsay. J. C. S. 35, 463.
" "	"	1.70941, 0°	Thorpe. J. C. S. 37, 356.
" "	"	1.49201, 138°.12	
Selenium chloride	$Se_2\,Cl_2$	2.906, 17°.5	Divers and Shimose. Ber. 17, 866.
Iodine monochloride	$I\,Cl$	3.263, 0°	Hannay. J. C. S. (2), 11, 818. Melts at 24°.7. Boils at 100°.5 to 101°.5.
" "	"	3.222, 16°.5	
" "	"	3.206, 18°.2	
" "	"	3.180, 30°	
" "	"	3.176, 32°	
" "	"	3.132, 45°	
" "	"	3.127, 48°	
" "	"	3.084, 60°	
" "	"	3.032, 72°	
" "	"	3.036, 75°	
" "	"	2.988, 86°	
" "	"	2.984, 90°	
" "	"	2.964, 95°	
" "	"	2.958, 98°	
" "	"	3.18223, 0°	Thorpe. J. C. S. 37, 371.
" "	"	2.88196, 101°.3	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Iodine trichloride	$I\ Cl_3$	3.1107	Christomanos. Ber. 10, 789.
Platinum dichloride	$Pt\ Cl_2$	5.8696, 11°	Bödeker. B. D. Z.
Platinum tetrachloride	$Pt\ Cl_4 .\ 8\ H_2\ O$	2.431, 15°	" "

2d. Double Chlorides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium magnesium chloride.	$Am_2\ Mg\ Cl_4 .\ 6\ H_2\ O$	1.456, 10°	Bödeker. B. D. Z.
Potassium zinc chloride	$K_2\ Zn\ Cl_4$	2.297	Schiff. A. C. P. 112, 88.
Ammonium zinc chloride	$Am_2\ Zn\ Cl_4$	1.879	" "
" " "	"	1.72 } 10°	Bödeker and Ehlers. B. D. Z.
" " "	"	1.77 } 10°	Bödeker and Ehlers. B. D. Z.
" " "	"	1.77	Romanis. C. N. 49, 273.
Barium zinc chloride	$Ba_2\ Zn\ Cl_6 .\ 4\ H_2\ O$	2.845	Warner. C. N. 27, 271.
Potassium cadmium chloride.	$K_2\ Cd\ Cl_4$	2.500	Schröder. Dm. 1873.
Strontium cadmium chloride.	$Sr\ Cd_2\ Cl_6 .\ 7\ H_2\ O$	2.708, 24°, m. of 3.	W. Knight. F.W.C.
Barium cadmium chloride	$Ba\ Cd\ Cl_4 .\ 4\ H_2\ O$	2.968	Topsöe. C. C. 4, 76.
" " "	"	2.952, 24°.5 }	W. Knight. F.W.C.
" " "	"	2.966, 25°.2 }	W. Knight. F.W.C.
Sodium mercury chloride.	$Na\ Hg\ Cl_3 .\ 2\ H_2\ O$	3.011	Playfair and Joule. M. C. S. 2, 401.
Potassium mercury chloride.	$K\ Hg\ Cl_3 .\ H_2\ O$	3.735, m. of 3.	" "
Ammonium mercury chloride.	$Am_2\ Hg_2\ Cl_6 .\ H_2 O$	3.822	" "
" "	$Am_2\ Hg\ Cl_4 .\ H_2\ O$	2.938	" "
Potassium iron chloride	$K_2\ Fe\ Cl_4 .\ 2\ H_2\ O$	2.162	Schabus. J. 3, 327.
Potassium copper chloride	$K_2\ Cu\ Cl_4 .\ 2\ H_2\ O$	2.426	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.400	Schiff. A. C. P. 112, 88.
" " "	"	2.369	Kopp. J. 11, 10.
" " "	"	2.410	Tschermak. S. W. A. 45, 603.
" " "	"	2.358 }	Schröder. Dm. 1873.
" " "	"	2.392 }	Schröder. Dm. 1873.
" " "	"	2.425 }	Schröder. Dm. 1873.
Rubidium copper chloride	$Rb_2\ Cu\ Cl_4 .\ 2\ H_2\ O$	2.895	Wyrouboff. B. S. M. 10, 127.
Ammonium copper chloride.	$Am_2\ Cu\ Cl_4 .\ 2\ H_2\ O$	2.018	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.963	Schiff. A. C. P. 112, 88.
" " "	"	1.977	Kopp. J. 11, 10.
" " "	"	2.066	Tschermak. S. W. A. 45, 603.

Name.	Formula.	Sp. Gravity.	Authority.
Ammonium copper chloride.	$Am_2\ Cu\ Cl_4.\ 2\ H_2\ O$	1.984, 24°	Evans. F. W. C.
Potassium palladiochloride.	$K_2\ Pd\ Cl_6$	2.806	Topsoë. C. C. 4, 76.
Ammonium palladiochloride.	$Am_2\ Pd\ Cl_6$	2.418	" "
Magnesium palladiochloride.	$Mg\ Pd\ Cl_6.\ 6\ H_2\ O$	2.124	" "
Zinc palladiochloride	$Zn\ Pd\ Cl_6.\ 6\ H_2\ O$	2.359	" "
Nickel palladiochloride	$Ni\ Pd\ Cl_6.\ 6\ H_2\ O$	2.353	" "
Potassium iridichloride	$K_2\ Ir\ Cl_6$	3.546, 15°	Bödeker. B. D. Z.
Ammonium iridichloride	$Am_2\ Ir\ Cl_6$	2.856, 15°	" "
Potassium platosochloride	$K_2\ Pt\ Cl_4$	3.3056, 20°.3	Clarke. A. J. S. (3), 16, 206.
" "	"	3.2909, 21°	
Ammonium platosochloride.	$Am_2\ Pt\ Cl_4$	2.84	Romanis. C. N. 49, 273.
Sodium platinchloride	$Na_2\ Pt\ Cl_6.\ 6\ H_2\ O$	2.500	Topsoë. C. C. 4, 76.
Potassium platinchloride	$K_2\ Pt\ Cl_2$	3.586, 15°	Bödeker. B. D. Z.
" "	"	3.694	Tschermak. S. W. A. 45, 603.
" "	"	3.3, 17°	Pettersson. U. N. A. 1874.
" "	"	3.32, 17°.2	
" "	"	3.344	Schröder. Dm. 1873.
Rubidium platinchloride	$Rb_2\ Pt\ Cl_6$	3.96, 17°.4	Pettersson. U. N. A. 1874.
" "	"	3.94, 17°.5	
Ammonium platinchloride.	$Am_2\ Pt\ Cl_6$	2.955, 15°	Bödeker. B. D. Z.
" "	"	3.009, 15°	
" "	"	2.960	Tschermak. S. W. A. 45, 603.
" "	"	3.0, 17°.2	Pettersson. U. N. A. 1874.
" "	"	2.936	Schröder. Dm. 1873.
" "	"	3.065	Topsoë. C. C. 4, 76.
Thallium platinchloride	$Tl_2\ Pt\ Cl_6$	5.76, 17°	Pettersson. U. N. A. 1874.
Magnesium platinchloride.	$Mg\ Pt\ Cl_6.\ 6\ H_2\ O$	2.437	Topsoë. C. C. 4, 76.
" "	$Mg\ Pt\ Cl_6.\ 12\ H_2\ O$	2.060	" "
Cadmium platinchloride	$Cd\ Pt\ Cl_6.\ 6\ H_2\ O$	2.882	" "
Barium platinchloride	$Ba\ Pt\ Cl_6.\ 4\ H_2\ O$	2.868	" "
Lead platinchloride	$Pb\ Pt\ Cl_6.\ 3\ H_2\ O$	3.681	" "
Manganese platinchloride	$Mn\ Pt\ Cl_6.\ 6\ H_2\ O$	2.692	" "
" "	$Mn\ Pt\ Cl_6.\ 12\ H_2\ O$	2.112	" "
Iron platinchloride	$Fe\ Pt\ Cl_6.\ 6\ H_2\ O$	2.714	" "
Copper platinchloride	$Cu\ Pt\ Cl_6.\ 6\ H_2\ O$	2.734	" "
Didymium platinchloride	$Di\ Pt\ Cl_7.\ 10\frac{1}{2}\ H_2\ O$	2.683, 21°.2	Cleve. U. N. A. 1885.
" "	"	2.696, 21°.2	
Samarium platinchloride	$Sm\ Pt\ Cl_7.\ 10\frac{1}{2}\ H_2\ O$	2.709, 21°.8	" "
" "	"	2.714, 21°.8	
Didymium aurichloride	$Di\ Au\ Cl_6.\ 10\ H_2\ O$	2.662, 18°	" "
" "	"	2.664, 18°	
Samarium aurichloride	$Sm\ Au\ Cl_6.\ 10\ H_2\ O$	2.739, 16°.5	" "
" "	"	2.744, 16°.5	
Potassium stannochloride	$K_2\ Sn\ Cl_4.\ 3\ H_2\ O$	2.514	Playfair and Joule. M. C. S. 2, 401.
Ammonium stannochloride.	$Am_2\ Sn\ Cl_4.\ 3\ H_2\ O$	2.104	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium stannichloride	$K_2\ Sn\ Cl_6$	2.686	Schröder. Dm. 1873.
" "	"	2.688	
" "	"	2.700	Joergensen.
" "	"	2.948	Romanis. C. N. 49, 273.
Cæsium stannichloride	$Cs_2\ Sn\ Cl_6$	3.3308, 20°.5	Stolba. D. J. 198, 225.
Ammonium stannichloride.	$Am_2\ Sn\ Cl_6$	2.387, m. of 4	Schröder. Dm. 1873.
" "	"	2.381 } Extremes.	
" "	"	2.396	
" "	"	2.511	Romanis. C. N. 49, 273.
Magnesium stannichloride.	$Mg\ Sn\ Cl_6.\ 6\ H_2\ O$	2.080	Topsoë and Christiansen.
Potassium antimony chloride.	$K_3\ Sb\ Cl_6.\ 2\ H_2\ O$	2.42	Romanis. C. N. 49, 273.

3d. Oxy- and Sulpho-Chlorides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Matlockite	$Pb_2\ O\ Cl_2$	7.21	Greg. J. 4, 821.
Mendipite	$Pb_3\ O_2\ Cl_2$	7.0—7.1	Dana's Mineralogy.
Atacamite	$Cu_2\ Cl\ (O\ H)_3$	3.898	Zepharovich. J. 24, 1186.
"	"	3.757	Tschermak. J. 26, 1201.
"	"	3.7688	Zepharovich. J. 26, 1201.
Botallackite	$Cu_4\ Cl_2\ (O\ H)_6.\ 3\ H_2\ O$	3.6	Church. J. C. S. 18, 213.
Tallingite	$Cu_5\ Cl_2\ (O\ H)_8$	3.5	Church. J. C. S. 18, 78.
Mercuric oxychloride	$Hg_3\ O_2\ Cl_2$	8.63	Blaas. Z. K. M. 5, 283.
Didymium oxychloride	$Di\ O\ Cl$	5.725 } 21°.2	Cleve. U. N. A. 1885.
" "	"	5.735	
" "	"	5.793, 21°.5	
Samarium oxychloride	$Sm\ O\ Cl$	6.987 } 21°	" "
" "	"	7.047	
Nitroxyl chloride	$N\ O_2\ Cl$	1.3677, 8°	Baudrimont. J. P. C. 31, 478.
" "	"	1.32, 14°	Müller. A. C. P. 122, 1.
Phosphorus oxychloride	$P\ O\ Cl_3$	1.673, 14°	Cahours. J. P. C. 45, 129.
" "	"	1.70, 12°	Wurtz. J. 1, 365.
" "	"	1.662, 19°.5	Mendelejeff. J. 13, 7.
" "	"	1.69371, 10°	Buff. A. C. P. 4 Supp. Bd., 129.
" "	"	1.69106, 14°	
" "	"	1.68626, 15°	
" "	"	1.64945, 51°	
" "	"	1.509116, 110°	

Name.	Formula.	Sp. Gravity.	Authority.
Phosphorus oxychloride	$P\,O\,Cl_3$	1.66	Wichelhaus. J. 20, 149.
" "	"	1.71163, 0°	Thorpe. J. C. S. 37, 337.
" "	"	1.50967, 107°.23	
" "	"	1.5142, 106°.7	Schall. Ber. 17, 2204.
Pyrophosphoric chloride	$P_2\,O_3\,Cl_4$	1.58, 7°	Geuther and Michaelis. B. S. C. 16, 231.
Vanadyl dichloride	$V\,O\,Cl_2$	2.88, 13°, s	Roscoe. P.T. 1868, 1.
Vanadyl trichloride	$V\,O\,Cl_3$	1.764, 20	Schafarik. J. P. C. 76, 142.
" "	"	1.841, 14°.5	Roscoe. P.T. 1868, 1.
" "	"	1.836, 17°.5	
" "	"	1.828, 24°	
" "	"	1.86534, 0°	Thorpe. J. C. S. 37, 348.
" "	"	1.63073, 127°.19	
" "	"	1.854, 18°	L'Hôte. C. R. 101, 1151.
Antimony oxychloride	$Sb_4\,O_5\,Cl_2$	5.014, s.	Cooke. Proc. Am. Acad. 1877.
Bismuth oxychloride	$Bi\,O\,Cl$	7.2, 20°, s.	Muir, Hoffmeister, and Robbs. J. C. S. 39, 37.
Daubreite	$Bi_5\,O_6\,Cl_3$	6.4—6.5	Domeyko. C. R. 82, [922.
Sulphur oxychloride	$S_2\,O\,Cl_4$	1.656, 0°	Ogier. Ber. 15, 922.
Thionyl chloride	$S\,O\,Cl_2$	1.675, 0°	Wurtz. J. P. C. 99, 255.
" "	"	1.67673, 0°	Thorpe. J. C. S. 37, 354.
" "	"	1.52143, 78°.8	
" "	"	1.6554, 10°.4	Nasini. Bei. 9, 324.
Sulphuryl chloride	$S\,O_2\,Cl_2$	1.661, 21°	Behrends. J. 30, 210.
" "	"	1.70814, 0°	Thorpe. J. C. S. 37, 359.
" "	"	1.56025, 69°.95	
Disulphuryl chloride	$S_2\,O_5\,Cl_2$	1.818, 16°	H. Rose. P. A. 44, 291.
" "	"	1.762	Rosenstiehl. J. 14, [121.
" "	"	1.819, 18°	Michaelis.
" "	"	1.85846, 0°	Thorpe. J. C. S. 37, 360.
" "	"	1.60610, 189°.59	
Chlorosulphonic acid	$S\,O_2.\;O\,H.\;Cl$	1.78474, 0°	Thorpe. J. C. S. 37, 358.
" "	"	1.54874, 155°.3	
" "	"	1.7633, 14°	Nasini. Bei. 9, 324.
Selenyl chloride	$Se\,O\,Cl_2$	2.44	Weber. J. 12, 91.
"	"	2.443, 13°	Michaelis. Z. C. 13, 460.
Chromyl dichloride	$Cr\,O_2\,Cl_2$	1.9134, 10°	Thomson. P. T. 1827, 159.
" "	"	1.71, 21°	Walter. Ann. (2), 66, 387.
" "	"	1.92, 25°	Thorpe. J. 21, 226.
" "	"	1.7538, 117°	Ramsay. J. C. S. 35, 463.
" "	"	1.96101, 0°	Thorpe. J. C. S. 37, 372.
" "	"	1.75780, 115°.9	
Phosphorus sulphochloride	$P\,S\,Cl_3$	1.631, 22°	Baudrimont. J. 14, [115.
" "	"	1.66820, 0°	Thorpe. J. C. S. 37, 341.
" "	"	1.45599, 125°.12	

IV. INORGANIC BROMIDES.

1st. Simple Bromides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lithium bromide	Li Br	3.102, 17°	Clarke. A. J. S. (3), 13, 293.
Sodium bromide	Na Br	2.952	Schiff. A. C. P. 108, 21.
" "	"	3.079, 17°.5	Kremers. J. 10, 67.
" "	"	3.011	Tschermak. S. W. A. 45, 603.
" "	"	3.198, 17°.3	Favre and Valson. C. R. 77, 579.
" " Fused	"	2.448	Quincke. P. A. 138, 141.
" "	$NaBr . 4 H_2O$	2.34	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.165, 16°.8	Favre and Valson. C. R. 77, 579.
Potassium bromide	K Br	2.415	Karsten. Schw. J. 65, 394.
" "	"	2.672	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.690, m. of 6	Schröder. P. A. 106, 226.
" "	"	2.712, 12°.7	Beamer. F. W. C.
" " Fused	"	2.199	Quincke. P. A. 138, 141.
" " Not pressed	"	2.505, 18°	Spring. Ber. 16, 2724.
" " Once "	"	2.704, 18°	Spring. Ber. 16, 2724.
" " Twice "	"	2.700, 18°	Spring. Ber. 16, 2724.
Rubidium bromide	Rb Br	3.358	Setterberg. Of. Ak. St. 1882, 6, 23.
Cæsium bromide	Cs Br	4.463	" "
Ammonium bromide	Am Br	2.379	Schröder. P. A. 106, 226.
" "	"	2.266, 10°	Bödeker. B. D. Z.
" " Cryst.	"	2.327	Eder. Ber. 14, 511.
" " Sublimed	"	2.3394	Eder. Ber. 14, 511.
" "	"	2.456	Stas. Mem. Acad. Belg. 43, 1.
Silver bromide	Ag Br	6.3534	Karsten. Schw. J. 65, 394.
" "	"	6.425, m. of 7	Schröder. P. A. 106, 226.
" "	"	6.215, 17°	Clarke. A. J. S. (3), 13, 294.
" "	"	6.245, 0°	Rodwell. P. T. 1882, 1125.
" " Molten	"	5.595, 427°	Rodwell. P. T. 1882, 1125.
" " "	"	6.2	Quincke. P. A. 138, 141.
Thallium bromide. Precip.	Tl Br	7.540, 21°.7	Keck. F. W. C.
" " After fusion.	"	7.557, 17°.3	Keck. F. W. C.
Zinc bromide	$ZnBr_2$	3.643, 10°	Bödeker. B. D. Z.
Cadmium bromide	$CdBr_2$	4.712, 14°	Bödeker and Giesecke. B. D. Z.
" "	"	4.910, 14°	Bödeker and Giesecke. B. D. Z.

Name.	Formula.	Sp. Gravity.	Authority.
Cadmium bromide	$Cd\ Br_2$	4.794, 19°.9	Knight. F. W. C.
Mercurous bromide	$Hg\ Br$	7.307	Karsten. Schw. J. 65, 394.
Mercuric bromide	$Hg\ Br_2$	5.9202	" "
" "	"	5.7298, 16°	Beamer. F. W. C.
" "	"	5.7461, 18°	
Calcium bromide	$Ca\ Br_2$	3.32, 11°	Bödeker. B. D. Z.
Strontium bromide	$Sr\ Br_2$	3.962, 12°	" "
" "	"	3.985, 20°.5	Favre and Valson. C. R. 77, 579.
" "	$Sr\ Br_2.\ 6\ H_2O$	2.358, 18°	" "
Barium bromide	$Ba\ Br_2$	4.23	Schiff. A. C. P. 108, 21.
" "	$Ba\ Br_2.\ 2\ H_2O$	3.690	" "
" " Cryst.	"	3.710	Schröder. Dm. 1873.
" " Pulv.	"	3.588	
" "	"	3.679, 24°.3	Harper. F. W. C.
Lead bromide	$Pb\ Br_2$	6.6302	Karsten. Schw. J. 65, 394.
" "	"	6.611, 17°.5	Kremers. J. 5, 397.
" " Ppt.	"	6.572, 19°.2	Keck. F. W. C.
Cuprous bromide	$Cu\ Br$	4.72, 12°	Bödeker. B. D. Z.
Boron tribromide	$B\ Br_3$	2.69, l	Wöhler and Deville. J. 10, 94.
Aluminum bromide	$Al\ Br_3$	2.54	Deville and Troost. J. 12, 26.
Didymium bromide	$Di\ Br_3.\ 6\ H_2O$	2.803 20°.7	Cleve. U. N. A. 1885.
" "	"	2.817 20°.7	
Samarium bromide	$Sn\ Br_3.\ 6\ H_2O$	2.969 21°.8	" "
" "	"	2.973 21°.8	
Silicon tetrabromide	$Si\ Br_4$	2.8128, 0°	Pierre. Ann. (3), 20, 28.
Titanium tetrabromide	$Ti\ Br_4$	2.6	Duppa. J. 9, 365.
Tin dibromide	$Sn\ Br_2$	5.117, 17°	Raymann and Preis. A. C. P. 223, 323.
Tin tetrabromide	$Sn\ Br_4$	3.322, 39°, l	Bödeker. B. D. Z.
" "	"	3.349, 35°	Raymann and Preis. A. C. P. 223, 323.
Phosphorus tribromide	$P\ Br_3$	2.92489, 0°	Pierre. Ann. (3), 20, 11.
" "	"	2.92311, 0°	Thorpe. J. C. S. 37, 335.
" "	"	2.49541, 172°.9	
Arsenic tribromide	$As\ Br_3$	3.66, 15°	Bödeker. B. D. Z.
Antimony tribromide	$Sb\ Br_3$	3.641, 90°, l	Kopp. A. C. P. 95, 352.
" "	"	3.473, 96°, l	Mac Ivor. C. N. 29, 179.
" "	"	4.148, 23°, s	Cooke. Proc. Am. Acad. 1877.
Bismuth tribromide	$Bi\ Br_3$	5.6041	Bödeker. B. D. Z.
" "	"	5.4, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 37.
Sulphur bromide	$S_2\ Br_2$	2.628, 4°	Hannay. J. C. S. 33, 288.
Selenium bromide	$Se_2\ Br_2$	3.604, 15°	Schneider. P. A. 128, 327.

2d. Double, Oxy-, and Sulpho-Bromides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium zinc bromide	$Am_2 Zn Br_4$	2.625, 13°	Bödeker. B. D. Z.
Barium cadmium bromide	$Ba Cd Br_4 . 4 H_2 O$	3.687	Topsoë. C. C. 4, 76.
" " "	"	3.665, 24°	Harper. F. W. C.
Hydrogen mercury bromide.	$H Hg Br_3 . 4 H_2 O$	3.17, fused	Thomsen. J. P. C. (2), 11, 283.
Potassium mercury bromide.	$K Hg Br_3$	4.410, m. of 3	Beamer. F. W. C.
" " "	$K Hg Br_3 . H_2 O$	3.865, 22°	" "
Potassium stannibromide	$K_2 Sn Br_6$	3.783	Topsoë. C. C. 4, 76.
Ammonium stannibromide.	$Am_2 Sn Br_6$	3.505	" "
Sodium platinbromide	$Na_2 Pt Br_6 . 6 H_2 O$	3.323	" "
Potassium platinbromide	$K_2 Pt Br_6$	4.68, 14°	Bödeker. B. D. Z.
" "	"	4.541	Topsoë. C. C. 4, 76.
Ammonium platinbromide	$Am_2 Pt Br_6$	4.200	" "
Magnesium platinbromide	$Mg Pt Br_6 . 12 H_2 O$	2.802	" "
Zinc platinbromide	$Zn Pt Br_6 . 12 H_2 O$	2.877	" "
Strontium platinbromide	$Sr Pt Br_6 . 9 H_2 O$	2.923	" "
Barium platinbromide	$Ba Pt Br_6 . 10 H_2 O$	3.713	" "
Lead platinbromide	$Pb Pt Br_6$	6.025	" "
Manganese platinbromide	$Mn Pt Br_6 . 12 H_2 O$	2.759	" "
Nickel platinbromide	$Ni Pt Br_6 . 6 H_2 O$	3.715	" "
Cobalt platinbromide	$Co Pt Br_6 . 12 H_2 O$	2.762	Two samples. Topsoë. C. C. 4, 76
" "	"	2.634	
Didymium auribromide	$Di Au Br_6 . 10 H_2 O$	3.297, 21°.2	Cleve. U.N.A.1885.
" "	"	3.311, 21°.2	
Samarium auribromide	$Sm Au Br_6 . 10 H_2 O$	3.383, 21°.2	" "
" "	"	3.398, 21°.2	
Nitrosyl tribromide	$N O Br_3$	2.628, 22°.6	Landolt. J. 13, 104.
Phosphoryl tribromide	$P O Br_3$	2.822	Ritter. J. 8, 301.
Vanadyl tribromide	$V O Br_3$	2.9673, 0°	Roscoe. A. C. P. 8 Supp. Bd. 95.
" "	"	2.9325, 14°.5	
Bismuth oxybromide	$Bi O Br$	6.70, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 37.
Phosphorus sulphobromide.	$P S Br_3$	2.85, 17°	Michaelis. A. C. P. 164, 9.
" "	"	2.87	Mac Ivor. C. N. 29, 116.
" "	$P S Br_3 . H_2 O$	2.7937, 18°	Michaelis. A. C. P. 164, 9.
" "	$P_2 S_3 Br_4$	2.2621, 17°	" "
Arsenic sulphobromide	$As S_2 Br_3$	2.789	Hannay. J. C. S. 33, 291.

V. INORGANIC IODIDES.

1st. Simple Iodides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lithium iodide	$Li\ I$	3.485, 23°	Clarke. A. J. S. (3), 13, 298.
Sodium iodide	$Na\ I$	3.450	Filhol. Ann. (3), 21, 415.
" "	"	3.654, 18°.2	Favre and Valson. C. R. 77, 579.
" "	$Na\ I.\ 4\ H_2O$	2.448, 20°.8	" "
Potassium iodide	$K\ I$	3.078	Boullay. Ann. (2), 43, 266.
" "	"	3.104	
" "	"	2.9084	Karsten. Schw. J. 65, 394.
" "	"	3.059	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.056	Filhol. Ann. (3), 21, 415.
" "	"	2.850	Schiff. A. C. P. 108, 21.
" "	"	2.970	Buignet. J. 14, 15.
" "	"	3.081	Schröder. P. A. 106, 226.
" "	"	3.077	
" "	"	2.497 at the melting p't.	Braun. J. C. S. (2), 13, 31.
" " Fused	"	2.497	Quincke. P. A. 138, 141.
" " Not press'd	"	3.012, 20°	Spring. Ber. 16, 2724.
" " Once "	"	3.110, 22°	
" " Twice "	"	3.112, 20°	
Potassium triiodide	$K\ I_3$	3.498	Johnson. C. N. 34, 256.
Rubidium iodide	$Rb\ I$	3.567	Setterberg. Of. Ak. St. 1882, 6, 23.
Cæsium iodide	$Cs\ I$	4.537	" "
Ammonium iodide	$Am\ I$	2.498, 11°	Bödeker. B. D. Z.
" "	"	2.443	Schröder. Dm. 1873.
Ammonium triiodide	$Am\ I_3$	3.749	Johnson. C. N. 37, 246.
Iodammonium iodide	$NH_3\ I_2$	2.46, 15°	Seamon. C. N. 44, 189.
Silver iodide	$Ag\ I$	5.614	Boullay. Ann. (2), 43, 266.
" "	"	5.0262	Karsten. Schw. J. 65, 394.
" "	"	5.500	Filhol. Ann. (3), 21, 415.
" "	"	5.35	Schiff. A. C. P. 108, 21.
" "	"	5.650	Schröder. P. A. 106, 226.
" "	"	5.718	
" " Cryst.	"	5.669, 14°	Damour. Quoted, C. R. 64, 314.

Name.	Formula.	Sp. Gravity.	Authority.
Silver iodide. Cryst.	Ag I	5.470 } 0°	H. St. Claire Deville. P. A. 132, 307. C. R. 64, 325.
" " "	"	5.544 } 0°	
" " After fusion	"	5.687	
" " Precipitated	"	5.807, 0°	
" " Ppt compressed.	"	5.569	Fizeau.
" " After rep. fusion.	"	5.675, 0°	Rodwell. P. T. 1882, 1125.
" " After one fusion.	"	5.660, 0°	
" " From Ag in H I.	"	5.812, 0°	
" " Ppt. after fusion.	"	5.681, 0°	
" " At max. density.	"	5.771, 163°	
" " At min. density.	"	5.673,	
" " Molten	"	5.522, 527°	
" " Iodyrite	"	5.64—5.67	Breithaupt. Dana's Min.
" " "	"	5.504	Domeyko. Dana's Min.
" " "	"	5.707	Damour. J. 7, 870.
" " "	"	5.366	J. L. Smith. J. 7, 870.
" " "	"	5.677, 14°	Damour. Quoted, C. R. 64, 314.
Thallium iodide. Precip.	Tl I	7.072, 15°.5	Twitchell. F. W. C.
" " Cast	"	7.0975, 14°.7	
Zinc iodide	$Zn\ I_2$	4.696, 10°	Bödeker and Giesecke. B. D. Z.
" "	"	4.666, 14°.2	Kebler. F. W. C.
Cadmium iodide. α variety.	$Cd\ I_2$	5.543, m. of 8	Kebler. A. C. J. 5, 235. Six samples, prepared by different methods. Temperatures of weighing, 10°.5 to 20°.4.
" " "	"	5.622, m. of 8	
" " "	"	5.660, m. of 7	
" " "	"	5.729, m. of 6	
" " "	"	5.610, m. of 3	
" " "	"	5.675, m. of 4	
" " "	"	5.701, m. of 4	Twitchell. A. C. J. 5, 235.
" " β variety.	"	4.576, 10°	Bödeker. B. D. Z.
" " "	"	4.612, m. of 7	Kebler. A. C. J. 5, 235. Two lots, 14° to 15°.4.
" " "	"	4.596, m. of 7	
" " "	"	4.688, m. of 5	Twitchell. A. C. J. 5, 235.
Mercurous iodide	Hg I	7.75	Boullay. Ann. (2), 43, 266.
" "	"	7.6445	Karsten. Schw. J. 65, 394.
Mercuric iodide	$Hg\ I_2$	6.32	Boullay. Ann. (2), 43, 266.
" "	"	6.2009	Karsten. Schw. J. 65, 394.
" "	"	6.250	Filhol. Ann. (3), 21, 415.
" "	"	5.91	Schiff. A. C. P. 108, 21.
" "	"	6.27	Tschermak. S. W. A. 45, 603.
" " Red	"	6.231, m. of 7	Owens. F. W. C.
" " "	"	6.2941 } 0°	Rodwell and Elder. P. T. 1882, 1143.
" " "	"	6.3004 } 0°	
" " "	"	6.276, 126°	
" " Yellow	"	6.225, 126°	

Name.	Formula.	Sp. Gravity.	Authority.
Mercuric iodide. Solid	$Hg\ I_2$	6.179, 200°	Rodwell and Elder. P. T. 1882, 1143.
" " Molten	"	5.286, 200°	
Strontium iodide	$Sr\ I_2$	4.415, 10°	Bödeker. B. D. Z.
Barium iodide	$Ba\ I_2$	4.917	Filhol. Ann. (3), 21, 415.
" "	$Ba\ I_2 . 7\ H_2O$	2.673, 20°.3	Leonard. F. W. C.
Lead iodide	$Pb\ I_2$	6.11	Boullay. Ann. (2), 43, 266.
" "	"	6.0212	Karsten. Schw. J. 65, 394.
" "	"	6.384	Filhol. Ann. (3), 21, 415.
" "	"	6.07	Schiff. A. C. P. 108, 21.
" "	"	6.207	Schröder. P. A. 107, 113.
" "	"	6.12	Rodwell. P. T. 1882, 1144.
" " Molten	"	5.6247, 383°	
Iron iodide	$Fe\ I_2 . 4\ H_2O$	2.873, 12°	Bödeker. B. D. Z.
Cuprous iodide	$Cu\ I$	4.410	Schiff. A. C. P. 108, 21.
" "	"	5.6936	Rodwell. P. T. 1882, 1153.
Aluminum iodide	$Al\ I_3$	2.63	Deville and Troost. J. 12, 26.
Tin tetriodide	$Sn\ I_4$	4.696, 11°	Bödeker. B. D. Z.
Arsenic triiodide	$As\ I_3$	4.39, 13°	" "
" "	"	4.374	Schröder. Dm. 1873.
Arsenic pentiodide	$As\ I_5$	3.93, approx.	Sloan. C. N. 46, 194.
Antimony triiodide	$Sb\ I_3$	5.01, 10°	Bödeker. B. D. Z.
" "	"	4.676	Schröder. Dm. 1873.
" " Hexagonal	"	4.848, 24°, m. of 5.	Cooke. Proc. Am. Acad. 1877.
" " Monoclinic	"	4.768, 22°, m. of 2.	
Bismuth triiodide	$Bi\ I_3$	5.652, 10°	Bödeker. B. D. Z.
" "	"	5.544, 18°.4	Kebler. A. C. J. 5, 235.
" "	"	5.64 } 20°	Gott and Muir. J. C. S. 53, 137.
" "	"	5.65 } 20°	

2d. Double and Oxy-Iodides.

Name.	Formula.	Sp. Gravity.	Authority.
Potassium cadmium iodide	$K_2 Cd\ I_4 . 2\ H_2O$	3.359, m. of 4.	Leonard. F. W. C.
Potassium mercury iodide	$K_2 Hg_2 I_6 . 3\ H_2O$	4.254, 22°	Owens. F. W. C.
" " "	"	4.289, 23°.5	
Silver mercury iodide	$2\ Ag\ I. Hg\ I_2$	5.9984, 0°	Bellati and Romanese. Bei. 5, 179.
" " "	$3\ Ag\ I. Hg\ I_2$	5.9302, 0°	" "
Copper mercury iodide	$2\ Cu\ I. Hg\ I_2$	6.0956, 0°	" "
" " "	$2\ Cu\ I. 2\ Hg\ I_2$	6.1507, 14°	Heighway. F. W. C.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver copper iodide	2 Cu I. Ag I	5.7302	Rodwell. P. T. 1882, 1160.
" " "	2 Cu I. 2 Ag I	5.7225	" "
" " "	2 Cu I. 3 Ag I	5.7160	" "
" " "	2 Cu I. 4 Ag I	5.7064	" "
" " "	2 Cu I. 12 Ag I	5.6950	" "
Silver lead iodide	$Pb I_2$. Ag I	5.923, 0°	" "
Sodium platiniodide	$Na_2 Pt I_6$. 6 H_2O	3.707	Topsoë. C. C. 4, 76.
Potassium platiniodide	$K_2 Pt I_6$	5.154 } 12°	Bödeker. B. D. Z.
" "	"	5.198 } 12°	Bödeker. B. D. Z.
" "	"	5.031	Topsoë. C. C. 4, 76.
Ammonium platiniodide	$Am_2 Pt I_6$	4.610	" "
Magnesium platiniodide	$Mg Pt I_6$. 9 H_2O	3.458	" "
Zinc platiniodide	$Zn Pt I_6$. 9 H_2O	3.689	" "
Manganese platiniodide	$Mn Pt I_6$. 9 H_2O	3.604	" "
Iron platiniodide	$Fe Pt I_6$. 9 H_2O	3.455	" "
Nickel platiniodide	$Ni Pt I_6$. 6 H_2O	3.976	" "
" "	$Ni Pt I_6$. 9 H_2O	3.549	" "
Cobalt platiniodide	$Co Pt I_6$. 9 H_2O	3.618	" "
" "	$Co Pt I_6$. 12 H_2O	3.048	" "
Schwartzembergite	$Pb_3 I_2 O_2$	6.3	Liebe. J. 20, 1008.
"	"	5.7	Schwartzemberg. Dana's Min.
Lead oxyiodide	$Pb_{11} I_4 O_{10}$	7.81	Cross and Sugiura. J. C. S. 33, 406.

VI. CHLOROBROMIDES, CHLORIODIDES, AND BROMIODIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Embolite	Ag (Cl Br)	5.31—5.43	Domeyko. Dana's Min.
"	"	5.806	Breithaupt. J. 2, 781.
" ($Cl_3 Br_2$)	"	5.53	Yorke. J. C. S. 4, 150.
Lead chlorobromide	Pb Cl Br	5.741	Iles. A. C. J. 3, 52.
Silicon chlorobromide	$Si Cl Br_3$	2.432	Reynolds. C. N. 55, 223.
Tin chlorobromide	$Sn Cl Br_3$	3.349, 35°	Reis and Raymann. J. C. S. 44, 424.
Phosphorus oxychlorobromide.	$P O Cl_2 Br$	2.059, 0°	Menschutkin. J. P. C. 98, 485.
" "	"	2.12065, 0°	Thorpe. J. C. S. 37, 372.
" "	"	1.83844, 137°.6	Thorpe. J. C. S. 37, 372.
Silver chlorobromiodide*	AgI. 2AgBr. 2AgCl	6.152, 0°	Rodwell. P. T. 1882, 1140.
" "	"	5.5118, 383°	Rodwell. P. T. 1882, 1140.
" " (Iodobromite)	"	5.713, 18°	Lasaulx. J. C. S. 36, 366.
" "	AgI. Ag Br. Ag Cl	6.1197, 0°	Rodwell. P. T. 1882, 1140.
" "	"	5.5673, 331°	Rodwell. P. T. 1882, 1140.

* Rodwell's chlorobromiodides may be regarded as alloys. For each of these the higher temperature is the melting point.

Name.	Formula.	Sp. Gravity.	Authority.
Silver chlorobromiodide	2 Ag I. Ag Br. Ag Cl	6.503, 0°	Rodwell. P.T. 1882, 1140.
" "	"	5.6971, 328	
" "	3 Ag I. Ag Br. Ag Cl	5.9717, 0°	" "
" "	"	5.6480, 354°	
" "	4 Ag I. Ag Br. Ag Cl	5.907, 0°	" "
" "	"	5.680, 380°	

VII. AMMONIO-CHLORIDES, AMMONIO-BROMIDES, AMMONIO-IODIDES.

Name.	Formula.	Sp. Gravity.	Authority.
Cadmammonium chloride	$N_2 H_6 Cd. Cl_2$	2.632	Topsoë. C. C. 4, 76.
Cadmammonium bromide	$N_2 H_6 Cd. Br_2$	3.366	" "
Dimercurosammonium chloride.	$N H_2 Hg'_2. Cl$	6.858, m. of 2	Playfair and Joule. M. C. S. 2, 401.
Dimercurammonium chloride.	$N_2 H_4 Hg''_2. Cl_2$	5.700	" "
Tetramercurammonium chloride.	$N_2 Hg''_4 Cl_2. 2 H_2 O$	7.176, m. of 2	" "
Cuprammonium chloride	$N_2 H_6 Cu. Cl_2$	2.194	" "
Copper ammonio-chloride	$Cu Cl_2. 4 N H_3. H_2 O$	1.672	" "
Nickel ammonio-bromide	$Ni Br_2. 6 N H_3$	1.837	Topsoë. C. C. 4, 76.
Nickel ammonio-iodide	$Ni I_2. 6 N H_3$	2.101	" "
Purpureo-cobalt hexchloride.	$Co_2 (N H_3)_{10}. Cl_6$	1.802, 23°	Gibbs and Genth. A. J. S. (2), 23, 234.
" " "	"	1.802 } 15°	Jörgensen. J. P. C. (2), 19, 49.
" " "	"	1.808 } 15°	
Purpureo-cobalt hexbromide.	$Co_2 (N H_3)_{10}. Br_6$	2.483, 17°.8	" "
Purpureo-cobalt chlorobromide.	$Co_2 (N H_3)_{10}. Cl_4 Br_2$	2.095, 16°.8	" "
Purpureo-cobalt bromochloride.	$Co_2 (N H_3)_{10}. Cl_2 Br_4$	2.161 } 17°	" "
" "	"	2.165 } 17°	
Luteo-cobalt hexchloride	$Co_2 (N H_3)_{12}. Cl_6$	1.7016, 20°	Gibbs and Genth. A. J. S. (2), 23, 319.
Purpureo-chromium hexchloride.	$Cr_2 (N H_3)_{10}. Cl_6$	1.687, 15°.5	Jörgensen. J. P. C. (2), 20, 105.
Purpureo-chromium chlorobromide.	$Cr_2 (N H_3)_{10}. Cl_2 Br_4$	2.075, 13°.8	" "
Purpureo-rhodium hexchloride.	$Rh_2 (N H_3)_{10}. Cl_6$	2.072, 18°.4	Jörgensen. J. P. C. (2), 27, 442.
" "	"	2.079, 18°	
Purpureo-rhodium hexbromide.	$Rh_2 (N H_3)_{10}. Br_6$	2.643 } 17°.5	Jörgensen. J. P. C. (2), 27, 464.
" "	"	2.650 } 17°.5	
Purpureo-rhodium hexiodide.	$Rh_2 (N H_3)_{10}. I_6$	3.110, 14°.8	Jörgensen. J. P. C. (2), 27, 471.
" "	"	3.120, 16°.2	

VIII. INORGANIC OXIDES.

1st. Simple Oxides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Water*	H_2O	1.0000, 4°.07	Standard of comparison.
“	“	.999889, 0°	H_2O at 3°.78=1.0. Muncke. Mém. Acad. St. Petersburg, 1831.
“	“	.988433, 50°	
“	“	.958737, 100°	
“	“	.999887, 0°	Stampfer. H_2O at 3°.75=1.0°. P. A. 21, 75.
“	“	.992247, 40°	
“	“	.999862, 0°	Despretz. Ann. (2), 70, 5.
“	“	.99988, 0°	Mendelejeff. A. C. P. 119, 1.
“	“	.95903, 95°.8	
“	“	.93078, 130°.8	
“	“	.93123, 131°	
“	“	.93035, 131°.1	
“	“	.90783, 156°.7	
“	“	.90811, 156°.7	
“	“	.90715, 157°	
“	“	.95892, 100°	Buff. H_2O at 0°=1.0. A. C. P. 4th Supp. 129.
“	“	.999866, 0°	Rossetti. Ann. (4), 10, 471. Sp. Gr. given for every degree from 0° to 50°.
“	“	1.000000, 4°.07	
“	“	.99975, 10°	
“	“	.99826, 20°	
“	“	.99575, 30°	
“	“	.99238, 40°	
“	“	.98835, 50°	
“	“	.99831, 20°	Bedson and Williams. Ber. 14, 2550.
“	“	.9543, 100°.1	Schiff. Ber. 14, 2763.
“	“	.9585, 100°.3	Schiff. Ber. 14, 2766.
“	“	.9587, 100°.3	
Ice	“	.91812, —.1°	Brunner. H_2O at 0°=1.0. P. A. 64, 113.
“	“	.91912, —10°	
“	“	.92025, —20°	
“	“	.9184, m. of 2	Playfair and Joule.† M. C. S. 2, 401.
“	“	.9175	Dufour. P. M. (4), 5, 20.
“	“	.918	Duvernoy. P. A. 117, 454.
“	“	.922	
“	“	.91674	Bunsen. Ann. (4), 23, 65.

* For water and ice the table makes no pretense at completeness. Only a few important values are given out of a vast number.

† See Playfair and Joule for older values.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ice	H_2O	.91686, 0°	Petterson. "Properties of water and ice."
Hydrogen dioxide	H_2O_2	1.452	Thénard. Watts' Dict.
Lithium oxide	Li_2O	2.102, 15°	Brauner and Watts. P. M. (5), 11, 60.
Sodium oxide	Na_2O	2.805	Karsten. Schw. J. 65, 394.
Potassium oxide	K_2O	2.656	" "
Silver monoxide	Ag_2O	7.143, 16°.6	Herapath. P. M. 64, 321.
" "	"	7.250	Boullay. Ann. (2), 43, 266.
" "	"	8.2558	Karsten. Schw. J. 65, 394.
" "	"	7.147	Playfair and Joule. M. C. S. 3, 84.
" "	"	7.521, m. of 2	Schröder. Ber. 9, 1888.
Silver dioxide	Ag_2O_2	5.474 (impure)	Mahla. J. 5, 424.
Glucinum oxide	Gl O	2.967	Ekeberg. P. M. (1), 14, 346.
" "	"	3.02 } cryst.	Ebelmen. J. 4, 15.
" "	"	3.06 } cryst.	Ebelmen. J. 4, 15.
" "	"	3.083, powder	H. Rose. P. A. 74, 433.
" "	"	3.09 "	H. Rose. P. A. 74, 433.
" "	"	3.096, 12°, ppt.	H. Rose. P. A. 74, 433.
" "	"	3.027, 10°, ignited.	H. Rose. P. A. 74, 433.
" "	"	3.021, 9°, cryst.	H. Rose. P. A. 74, 433.
" "	"	3.016	Nilson and Pettersson. C. R. 91, 232.
" "	"	3.18, 14°, cryst.	Grandeau. Ann. (6), 8, 193.
Magnesium oxide	Mg O	3.674, periclase	Damour. J. 2, 732.
" "	"	3.750 "	Scacchi. J. P. C. 28, 486.
" "	"	3.642, 12° "	Cossa. Ber. 10, 1747.
" "	"	3.200	Karsten. Schw. J. 65, 394.
" "	"	3.644	H. Rose. P. A. 74, 437.
" "	"	3.650	H. Rose. P. A. 74, 437.
" "	"	3.636, cryst.	Ebelmen. J. 4, 15.
" "	"	3.42, amorphous.	Brügelmann. Ber. 13, 1741.
" "	"	3.1932, 0°, calcined at 350°	Ditte. J. C. S. (2), 9, 870.
" "	"	3.2014, 0°, calcined at 440°	Ditte. J. C. S. (2), 9, 870.
" "	"	3.2482, 0°, calcined at low redness.	Ditte. J. C. S. (2), 9, 870.
" "	"	3.5699, 0°, cal. at bright redness.	Ditte. J. C. S. (2), 9, 870.
" "	"	2.74	From three different sources. Beckurts. Ber. 14, 2063.
" "	"	3.056	From three different sources. Beckurts. Ber. 14, 2063.
" "	"	3.69	From three different sources. Beckurts. Ber. 14, 2063.

Name.	Formula.	Sp. Gravity.	Authority.
Zinc oxide	Zn O	5.432	Mohs. See Böttger.
" "	"	5.600	Boullay. Ann. (2), 43, 266.
" "	"	5.7344	Karsten. Schw. J. 65, 394.
" "	"	5.6067	Brooks. P. A. 74, 439.
" "	"	5.6570	
" "	"	5.5298, cryst.	W. and T. J. Herapath. J. C. S. 1, 42.
" "	"	5.612	Filhol. Ann. (3), 21, 415.
" "	"	5.782, 15°, cryst	Brügelmann. P. A. (2), 4, 286.
" "	"	5.47, amorphous.	Brügelmann. Ber. 13, 1741.
" " Zincite	"	5.684	Blake. J. 13, 752.
" " Artif. cryst.	"	5.5—5.6	Gorgeu. B. S. C. 47, 146.
Cadmium oxide	Cd O	8.183, 16°.5	Herapath. P. M. 64, 321.
" "	"	6.9502	Karsten. Schw. J. 65, 394.
" " Cryst.	"	8.1108	Werther. J. 5, 890.
Mercurous oxide	Hg_2O	10.69, 16°.5	Herapath. P. M. 64, 321.
" "	"	8.9503	Karsten. Schw. J. 65, 394.
Mercuric oxide	Hg O	11.074, 17°.5	Herapath. P. M. 64, 321.
" "	"	11.085, 18°.3	
" "	"	11.0	Boullay. Ann. (2), 43, 266.
" "	"	11.1909	Karsten. Schw. J. 65, 394.
" "	"	11.29	Leroyer and Dumas. See Böttger.
" "	"	11.344	Playfair and Joule. M. C. S. 3, 84.
" "	"	11.136	Playfair and Joule. J. C. S. 1, 137.
Calcium oxide. Lime	Ca O	3.179	Boullay. Ann. (2), 43, 266.
" " "	"	3.16105	Karsten. Schw. J. 65, 394.
" " "	"	3.180	Filhol. Ann. (3), 21, 415.
" " "	"	3.251, cryst.	Brügelmann. P. A. (2), 4, 282.
" " "	"	3.32 "	Levallois and Meunier. C. R. 90, 1566.
Strontium oxide	Sr O	3.9321	Karsten. Schw. J. 65, 394.
" "	"	4.611	Filhol. Ann. (3), 21, 415.
" "	"	4.750, cryst.	Brügelmann. P. A. (2), 4, 282.
" "	"	4.51, amorphous.	Brügelmann. Ber. 13, 1741.

Name.	Formula.	Sp. Gravity.	Authority.
Barium oxide	Ba O	4.0	Fourcroy. See Böttger.
" "	"	4.2583	Tünnermann. See Böttger.
" "	"	4.7322	Karsten. Schw. J. 65, 394.
" "	"	4.829	Playfair and Joule. M. C. S. 3, 84.
" "	"	4.986	
" "	"	5.456	Filhol. Ann. (3), 21, 415.
" "	"	5.722, cryst.	Brügelmann. P. A. (2), 4, 282.
" "	"	5.32 "	Brügelmann. Ber. 13, 1741.
Barium dioxide	$Ba\ O_2$	4.958	Playfair and Joule. M. C. S. 3, 84.
Boron trioxide	$B_2\ O_3$	1.803	Davy. See Böttger.
" "	"	1.83	Berzelius. "
" "	"	1.75	Breithaupt. "
" "	"	1.825, 21°.6	Favre and Valson. C. R. 77, 579.
" "	"	1.8766, 0°	Ditte. C. N. 36, 287.
" "	"	1.8476, 12°	
" "	"	1.6988, 80°	
" "	"	1.848, 14°.4	Bedson and Williams. Ber. 14, 2554.
" "	"	1.853, 15°.8	
" " Fused	"	1.75	Quincke. P. A. 135, 642.
Aluminum trioxide	$Al_2 O_3$	4.152, 4°	Royer and Dumas. Quoted by Rose, P. A. 47, 429.
" "	"	3.944	Mohs and Breithaupt. Quoted by Rose.
" "	"	4.004	
" "	"	4.154	Filhol. Ann. (3), 21, 415.
" "	"	3.928, cryst.	Ebelmen. J. 414.
" "	"	3.870 Artificial.	H. Rose. P. A. 74, 429.
" "	"	3.899	
" "	"	3.750 Heated in wind furn'ce	
" "	"	3.725	
" "	"	3.999, ignited in porcelain furnace.	
" "	"	4.0067, 14°, powdered.	Schaffgotsch P. A. 74, 429.
" "	"	3.989 13°.5, after ignit'n	
" "	"	4.008	
" "	"	3.990	Nilson and Pettersson. C. R. 91, 232.
" " Artificial cryst.	"	3.98, 14°	Grandeau. Ann. (6), 8, 193.
" " Ruby	$Al_2\ O_3$	3.5311	Brisson. P. des C.
" " "	"	3.994, m. of 9	Schaffgotsch. P. A. 74, 429.

Name.	Formula.	Sp. Gravity.	Authority.
Aluminum trioxide. Ruby	Al_2O_3	3.95, natural	Williams. C. N. 28, 101.
" " "	"	3.7, artificial	
" " Sapphire	"	3.562	Muschenbroek. See Böttger.
" " "	"	3.9998	Schaffgotsch. P. A. 74, 429.
" " "	"	4.0001	
" " "	"	3.98	Williams. C. N. 28, 101.
" " "	"	3.990	Nilson and Pettersson. C. R. 91, 232.
" " Corundum	"	3.899, 15°.5	Schaffgotsch. P. A. 74, 429.
" " "	"	3.929	
" " "	"	3.974	
" " "	"	4.022	Deville. J. 8, 15.
" " "	"	3.992, after ignition.	
" " "	"	3.979, 15°.5	Church. Geol. Mag. (2), 2, 320.
" " "	"	4.03, 15°.5	
Scandium trioxide	Sc_2O_3	3.8	Cleve. C. R. 89, 420.
" "	"	3.864	Nilson. C. R. 91, 118.
Yttrium trioxide	Yt_2O_3	4.842	Ekeberg. P. M. 14, 346.
" "	"	5.028, 22°	Cleve and Hoeglund. 1873.
" "	"	5.046	Nilson and Pettersson. C. R. 91, 232.
Indium trioxide	In_2O_3	7.179	" "
Lanthanum trioxide	La_2O_3	5.94	Hermann. J. 14, 192.
" "	"	5.296, 16°	Nordenskiöld. J. 14, 197.
" "	"	6.53. 17°	Cleve. B. S. C. 21, 196.
" "	"	6.480	Nilson and Pettersson. C. R. 91, 232.
Didymium trioxide	Di_2O_3	6.64	Hermann. J. 14, 195.
" "	"	5.825, 14°	Nordenskiöld. J. 14, 197.
" "	"	6.852	Cleve. J. C. S. (2), 13, 340.
" "	"	6.950	Nilson and Pettersson. C. R. 91, 232.
" "	"	7.177, 13°.5	Cleve. U. N. A. 1885.
" "	"	7.182, 13°.5	
Didymium pentoxide	Di_2O_5	5.368, 15°	Brauner. Ber. 15, 113.
Samarium trioxide	Sm_2O_3	8.311, 13°	Cleve. U. N. A. 1885.
" "	"	8.383, 15°	
Erbium trioxide	Er_2O_3	8.8	Cleve and Hoeglund. B. S. C. 18, 195.
" "	"	8.9	
" "	"	8.640	Nilson and Pettersson. C. R. 91, 232.
Ytterbium trioxide	Yb_2O_3	9.175	" "
Carbon dioxide. L.	CO_2	.9, —20°	Thilorier. Ann. (2), 60, 427.
" " "	"	.83, 0°	
" " "	"	.6, +30°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Carbon dioxide. L.	CO_2	.93, 0°	Mitchell. B. J. 22, 77.
" " "	"	.8825, 6°.4	
" " "	"	.853, 10°.6	
" " "	"	.7385, 20°.3	
" " "	"	.9952, —10°	D'Andreéff. Ann. (3), 56, 317.
" " "	"	.9710, —5°	
" " "	"	.9471, 0°	
" " "	"	.9222, +5°	
" " "	"	.8948, 10°	
" " "	"	.8635, 15°	
" " "	"	.8267, 20°	
" " "	"	.7831, 25°	
" " "	"	1.057, —34°	Cailletet and Mathias. C. R. 102, 1202.
" " "	"	1.016, —25°	
" " "	"	.966, —11°.5	
" " "	"	.910, —1°.6	
" " "	"	.907, +1°.3	
" " "	"	.868, 6°.8	
" " "	"	.840, 11°	
" " "	"	.788, 15°.9	
" " "	"	.726, 22°.2	
" " Solid	"	1.188	Landolt. Ber 17, 311.
" " "	"	1.199	
" " "	"	1.58—1.6	Dewar. Read at Am. Assoc. in 1884.
Silicon monoxide	Si O	2.893, 4°	Mabery. A. C. J. 9, 15.
Silicon dioxide. Artif.	SiO_2	2.20, 12°.5, m. of 9.	Schaffgotsch. P. A. 68, 147.
" "	"	2.322	Ullik. Ber. 11, 2125. From gelatinous silica, ignited.
" "	"	2.324	
" " Quartz	"	2.653, cryst.	Scheerer.
" " "	"	2.659, ameth'st	Breithaupt. Schw. J. 68, 411.
" " "	"	2.744 "	
" " "	"	2.651, smoky	
" " "	"	2.658 "	
" " "	"	2.651, rose	
" " "	"	2.653 "	
" " "	"	2.658 "	
" " "	"	2.618, milky	
" " "	"	2.6354	Beudant. P. A. 14, 474. Extremes of eleven experiments.
" " "	"	2.6541	
" " "	"	2.61	Neumann. P. A. 23, 1.
" " "	"	2.653, 13°, m. of 5.	Schaffgotsch.* P. A. 68, 147.
" " "	"	2.656, cryst.	Deville. J. 8, 14.
" " "	"	2.22, after fusion.	
" " "	"	2.65259, 18°	Miller. P. M. (4), 3, 194.

*See the same paper for many determinations of the specific gravity of opaline minerals.

Name.	Formula.	Sp. Gravity.	Authority.
Silicon dioxide. Quartz	$Si\ O_2$	2.6507, 0°	Dibbits. (Rock crystal.) Bei. 5, 81. Calculated from sp. g. determinations by Steinheil, data for expansion of water by Regnault and Kopp, and the expansion of quartz as determined by Pfaff and Fizeau.
" " "	"	2.6502, 5°	
" " "	"	2.6498, 10°	
" " "	"	2.6493, 15°	
" " "	"	2.6488, 20°	
" " "	"	2.6484, 25°	
" " "	"	2.6479, 30°	
" " "	"	2.6460, 50°	
" " "	"	2.6409, 100°	
" " Tridymite	$Si\ O_2$	2.295, 15°–16°	Vom Rath. J. 21, 1001.
" " "	"	2.326, 15°–16°	
" " "	"	2.282, 18°.5	
" " "	"	2.311, Artif.	G. Rose. Ber. 2, 388.
" " "	"	2.317, Artif.	
" " "	"	2.373, Artif.	
" " "	"	2.30, 16°, "	Hautefeuille. P. M. (5), 6, 78.
" " Asmannite	"	2.247	v. Rath. A. J. S. (3), 7, 149.
Titanium dioxide	$Ti\ O_2$	4.18	Klaproth.
" "	"	3.9311, artif.	Karsten. Schw. J. 65, 394.
" "	"	4.253, powder	Rose.
" "	"	4.255, ignited	
" " Rutile	"	4.249	Mohs. See Böttger.
" " "	"	4.244—4.245	Scheerer. P. A. 65, 296.
" " "	"	4.250	Breithaupt.
" " "	"	4.291	
" " "	"	4.420, 0°	Kopp.
" " "	"	4.56	Müller. J. 5, 347.
" " "	"	4.26, artificial.	Ebelmen. J. 4, 15, and J. 12, 14.
" " "	"	4.283 "	
" " "	"	4.3 "	Hautefeuille. J. 16, 212.
" " "	"	4.173—4.278	Lasaulx. J. 36, 1840.
" " Brookite	"	4.128	H. Rose.
" " "	"	4.131	
" " "	"	4.165	
" " "	"	4.166	
" " "	"	3.952, arkansite.	Breithaupt. J. 2, 730.
" " "	"	3.892	Rammelsberg. J. 2, 730.
" " "	"	3.949	
" " "	"	4.03, arkansite	Damour. J. 2, 731.
" " "	"	4.083 "	
" " "	"	4.085 "	Whitney. J. 2, 731.
" " "	"	4.22	Frödmann. J. 3, 704.
" " "	"	4.20	Beck. J. 3, 704.
" " "	"	4.1, artificial	Hautefeuille. J. 17, 214.
" " Anatase	"	3.857	Vauquelin.
" " "	"	3.826	Mohs. See Böttger.
" " "	"	3.75	Breithaupt.

Name.	Formula.	Sp. Gravity.	Authority.
Titanium dioxide. Anatase	$Ti\ O_2$	3.82	Kobell.
" " "	"	3.890	H. Rose.
" " "	"	3.912	H. Rose.
" " "	"	4.06	Damour. J. 10, 661.
" " "	"	3.7, artificial	Hautefeuille. J. 17, 215.
" " "	"	3.9 "	Hautefeuille. J. 17, 215.
Germanium dioxide	$Ge\ O_2$	4.703, 18°	Winkler. Ber. 19, ref. 654.
Zirconium dioxide	$Zr\ O_2$	4.30	Klaproth. See Böttger.
" "	"	5.5	Sjögren. J. 6, 349.
" "	"	4.9	Berlin. J. 6, 350.
" "	"	5.49	Hermann. J. 19, 191.
" "	"	5.742, 15°	Nordenskiöld. P. A. 114, 626.
" "	"	5.710, 15°	Nordenskiöld. P. A. 114, 626.
" "	"	5.624, 15°	Nordenskiöld. P. A. 114, 626.
" "	"	5.42, cryst.	Knop. A. C. P. 159, 52.
" "	"	5.52, noria.	Knop. A. C. P. 159, 53.
" "	"	5.850	Nilson and Petersson. C. R. 91, 232.
Tin monoxide	$Sn\ O$	6.666, 16°.5	Herapath. P. M. 64, 321.
" "	"	5.9797, 0°, olive	Ditte. Ann. (5), 27, 169. All crystalline. Prepared by different methods.
" "	"	6.1083, 0°, dark green.	Ditte. Ann. (5), 27, 169. All crystalline. Prepared by different methods.
" "	"	6.600, 0°, black	Ditte. Ann. (5), 27, 169. All crystalline. Prepared by different methods.
" "	"	6.3254, 0°, dark violet.	Ditte. Ann. (5), 27, 169. All crystalline. Prepared by different methods.
" "	"	6.4465, 0°, ditto heated to 300°.	Ditte. Ann. (5), 27, 169. All crystalline. Prepared by different methods.
Tin dioxide	$Sn\ O_2$	6.96	Mohs. See Böttger.
" "	"	6.639, 16°.5	Herapath. P. M. 64, 321.
" "	"	6.90	Boullay. Ann. (2), 43, 266.
" "	"	6.892	Breithaupt.
" "	"	7.180	Breithaupt.
" "	"	6.952	Neumann. P. A. 23, 1.
" "	"	6.831, 0°	Kopp.
" " Artif. cryst.	"	6.72	Daubrée. J. 12, 11.
" "	"	6.849	H. Rose.
" "	"	6.978	H. Rose.
" "	"	6.7122, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	6.753	Mallet. J. 3, 705.
" "	"	6.862	Bergemann. J. 10, 661.
" "	"	6.8432, 15°.5, colorless.	Cassiterite from Bolivia. Forbes. P. M. (4), 30, 139.
" "	"	6.8439, 15°.5, colorless.	Cassiterite from Bolivia. Forbes. P. M. (4), 30, 139.
" "	"	6.704, 15°.5, yellow.	Cassiterite from Bolivia. Forbes. P. M. (4), 30, 139.
" "	"	6.7021, 15°.5, black.	Cassiterite from Bolivia. Forbes. P. M. (4), 30, 139.
" " Artif. cryst.	"	6.019	Leeds.

Name.	Formula.	Sp. Gravity.	Authority.
Tin dioxide. Artif. cryst.	$Sn\ O_2$	6.70	Levy and Bourgeois. Bei. 6, 531.
Lead hemioxide	$Pb_2\ O$	9.772	Playfair and Joule. M. C. S. 3, 83.
Lead monoxide	$Pb\ O$	9.277, 17°.5	Herapath. P. M. 64, 321.
" "	"	9.500	Boullay. See Böttger.
" "	"	9.2092	Karsten. Schw. J. 65, 394.
" "	"	9.250	Playfair and Joule. M. C. S. 3, 84.
" "	"	9.361	Filhol. Ann. (3), 21, 415.
" "	"	9.3634, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	8.02, cryst.	Grailich. J. 11, 186.
" "	"	9.1699, greenish yellow.	Ditte. C. R. 94, 1810. Samples differently prepared by boiling $Pb\ (O\ H)_2$ with K O H.
" "	"	9.2089, yellow	
" "	"	9.8835, brownish yellow.	
" "	"	9.5605, greenish gray.	
" "	"	9.4223, dark green.	
" "	"	9.3757	
" "	"	9.29, 15°, yellow cryst.	Geuther. A. C. P. 219, 60–61.
" "	"	9.126, 15°, red cryst.	
" "	"	9.125, 14°, red cryst.	
" "	"	9.09, 15°, red pulv.	
" "	"	8.74, 14°, red, very pure.	
Lead dioxide	$Pb\ O_2$	8.902, 16°.5	Herapath. P. M. 64, 321.
" "	"	8.933	Karsten. Schw. J. 65, 394.
" "	"	8.756	Playfair and Joule. M. C. S. 3, 84.
" "	"	8.897	
" "	"	9.045	Wernicke. J. C. S. (2), 9, 806.
Minium	$Pb_3\ O_4$	8.94	Muschenbroek. Watts' Dict.
"	"	9.096, 15°	Herapath. P. M. 64, 321.
"	"	9.190	Boullay. Ann. (2), 43, 266.
"	"	8.62	Karsten. Schw. J. 65, 394.
Cerium dioxide	$Ce\ O_2$	5.6059	" "
" "	"	6.00	Hermann. J. P. C. 92, 113.
" "	"	6.93 15°.5	Nordenskiöld. J. 14, 184.
" "	"	6.94 15°.5	

Name.	Formula.	Sp. Gravity.	Authority.
Cerium dioxide	$Ce\ O_2$	7.09, 14°.5, cryst.	Nordenskiöld. J. 14, 184.
" "	"	6.739	Nilson and Petersson. C. R. 91, 232.
Thorium dioxide*	$Th\ O_2$	9.402	Berzelius. P. A. 16, 385.
" "	"	9.21	Nordenskiöld and Chydenius. J. 13, 184.
" "	"	9.077	Chydenius. J. 16, 194.
" "	"	9.200	
" "	"	9.861	Nilson and Petersson. C. R. 91, 232.
" "	"	10.2199, 17°	Nilson. Ber. 15, 2536.
" "	"	10.2206, 17°	
" "	"	9.876, 15°	Troost and Ouvrard. C. R. 102, 1422.
Nitrogen monoxide. L.	$N_2\ O$	.9756, —5°	D'Andreéff. Ann. (3), 56, 317.
" "	"	.9370, 0°	
" "	"	.9177, +5°	
" "	"	.8964, 10°	
" "	"	.8704, 15°	
" "	"	.8365, 20°	
" "	"	.9004, 0°	Will. C. N. 28, 170.
" "	"	.9434	Wroblevsky. C. R. 97, 166.
" "	"	1.002, —20°.6	Cailletet and Mathias. C. R. 102, 1202.
" "	"	.952, —11°.6	
" "	"	.930, —5°.5	
" "	"	.912, —2°.2	
" "	"	.849, +6°.6	
" "	"	.810, 11°.7	
" "	"	.758, 19°.8	
" "	"	.698, 28°.7	
Nitrogen tetroxide. L.	$N_2\ O_4$	1.451	Dulong. Schw. J. 18, 177.
" "	"	1.42	Mitscherlich. Schw. J. 63, 109.
" "	"	1.4903, 0°	Thorpe. J. C. S. 37, 224.
" "	"	1.48958, 21°.64	
Phosphorus pentoxide	$P_2\ O_5$	2.387	Brisson. P. des C.
Vanadium dioxide	$V_2\ O_2$	3.64, 20°	Schafarik. J. P. C. 76, 142.
Vanadium trioxide	$V_2\ O_3$	4.72, 16°, m. of 3.	Schafarik. J. P. C. 90, 12.
Vanadium pentoxide	$V_2\ O_5$	3.472, 20°	Schafarik. J. P. C. 76, 142.
" "	"	3.510, 20°	
" "	"	3.35	J. J. Watts. Roscoe and Schorlemmer's Treatise.
Arsenic trioxide	$As_2\ O_3$	3.698	LeRoyer and Dumas. Gm. H. 1, 69.
" "	"	3.690	Leonhard.
" "	"	3.710	

* For this substance Nilson's determination is the only one of value.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Arsenic trioxide	As_2O_3	3.695, octahedral.	Guibourt. B. J. 7, 128.
" "	"	3.7385, amorphous.	
" "	"	3.729, 17°.2	Herapath. P. M. 64, 321.
" "	"	3.7026	Karsten. Schw. J. 65, 394.
" "	"	3.7202	
" "	"	3.798	Taylor. Gm. H.
" "	"	3.884	Filhol. Ann. (3), 21, 415.
" "	"	3.85, native	Claudet. J. 21, 230.
Arsenic pentoxide	As_2O_5	3.7342	Karsten. Schw. J. 65, 394.
" "	"	3.985	Playfair and Joule. M. C. S. 3, 83.
" "	"	4.023	
" "	"	4.250	Filhol. Ann. (3), 21, 415.
Antimony trioxide	Sb_2O_3	5.566	Mohs. See Böttger.
" "	"	5.778	Boullay. Ann. (2), 43, 266.
" "	"	6.6952	Karsten. Schw. J. 65, 394.
" "	"	5.251	Playfair and Joule. M. C. S. 3, 88.
" "	"	5.11, octahedral.	Terreil. J. P. C. 98, 154.
" "	"	3.72, prismatic.	
Valentinite	"	5.566	Dana's Mineralogy.
Senarmontite	"	5.22—5.30	" "
Antimony tetroxide	Sb_2O_4	4.074	Playfair and Joule. M. C. S. 3, 83.
Cervantite	"	4.084	Dana's Mineralogy.
Antimony pentoxide	Sb_2O_5	6.525	Boullay. Ann. (2), 43, 266.
" "	"	3.779	Playfair and Joule. M. C. S. 3, 83.
Bismuth trioxide	Bi_2O_3	8.211, 18°.3	Herapath. P. M. 64, 321.
" "	"	8.449	Le Royer and Dumas. See Böttger.
" "	"	8.1785	Karsten. Schw. J. 65, 394.
" "	"	8.079	Playfair and Joule. M. C. S. 3, 82.
" "	"	8.855	Schröder. Dm. 1873.
" "	"	8.868	
Bismuth tetroxide	Bi_2O_4	5.6, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 32.
Bismuth pentoxide	Bi_2O_5	5.917 15°	Brauner and Watts. P. M. (5), 11, 60.
" "	"	5.919 15°	
" "	"	5.1, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 32.
Columbium pentoxide	Cb_2O_5	4.56 Extremes of several determinations.	H. Rose. J. 1, 405.
" "	"	5.26	

Name.	Formula.	Sp. Gravity.	Authority.
Columbium pentoxide	Cb_2O_5	6.140 From fusion with $K_2S_2O_7$	H. Rose. J. 12, 158. For full details as to modes of preparation, character of samples, etc., see the original paper.
" "	"	6.146 From fusion with $K_2S_2O_7$	
" "	"	6.48, ditto, ignited.	
" "	"	5.83, more strongly ignited.	
" "	"	5.90 From $Cb\,Cl_5$	
" "	"	5.98 From $Cb\,Cl_5$	
" "	"	5.706 From $Cb\,Cl_5$	
" "	"	6.239 From $Cb\,Cl_5$	
" "	"	6.725, ditto, ignited.	
" "	"	5.79, more strongly ignited.	
" "	"	5.51	
" "	"	5.52	
" "	"	4.56 Extremes of several determinations.	H. Rose. J. 13, 148.
" "	"	6.54 Extremes of several determinations.	
" "	"	5.20 14°, cryst.	Nordenskiöld. J. 14, 209.
" "	"	5.48 14°, cryst.	
" "	"	4.37, 4.46 Prep. by two methods	Marignac. J. 18, 198.
" "	"	4.51, 4.53 Prep. by two methods	
" "	"	5.00	Hermann. J. 18, 209.
" "	"	4.31	Knop. A. C. P. 159, 36.
Tantalum pentoxide	Ta_2O_5	7.03 Extremes of several determinations.	H. Rose. J. 1, 404.
" "	"	8.26 Extremes of several determinations.	
" "	"	7.055 From fusion with $K_2S_2O_7$	H. Rose. J. 10, 178. For full details see the original paper.
" "	"	7.065 From fusion with $K_2S_2O_7$	
" "	"	7.986, ditto, ignited.	
" "	"	7.028 From $Ta\,Cl_5$	
" "	"	7.280 From $Ta\,Cl_5$	
" "	"	7.284, ditto, crystalline.	
" "	"	7.994, ditto, ignited.	
" "	"	7.652, ditto, more strongly.	
" "	"	8.257, ditto, in porcelain furnace.	
" "	"	7.00	Hermann. J. 18, 209.
" "	"	7.35, from $Ta\,Cl_5$, ignited.	Marignac. J. P. C. 99, 33.
" "	"	8.01, from NH_4 salt.	

Name.	Formula.	Sp. Gravity.	Authority.
Tantalum pentoxide	Ta_2O_5	7.60 } From K	Marignac. J. P. C. 99, 33.
" "	"	7.64 } salt.	
" "	"	7.234	Oesten. P. A. 100, 342.
" "	"	7.253	
Sulphur dioxide. L.	SO_2	1.42	Faraday. P. T. 1823, 189.
" "	"	1.45	Bussy. P. A. 1, 237.
" "	"	1.4911, —20°.5	D'Andreéff. Ann. (3), 56, 317.
" "	"	1.4609, —9°.9	
" "	"	1.4384, —2°.08	
" "	"	1.4318, —0°.25	
" "	"	1.4252, +2°.8	
" "	"	1.4205, 4°.51	
" "	"	1.4102, 8°.27	
" "	"	1.4017, 11°.5	
" "	"	1.3887, 16°.43	
" "	"	1.3769, 20°.63	
" "	"	1.3673, 23°.91	
" "	"	1.3587, 26°.9	
" "	"	1.3513. 29°.57	
" "	"	1.3415, 32°.96	
" "	"	1.3350, 35.°29	
" "	"	1.3258, 38°.65	
" "	"	1.4338, 0°	Cailletet and Mathias. C. R. 104, 1563. 156° is the critical temperature.
" "	"	1.3757, 21°.7	
" "	"	1.3374, 35°.2	
" "	"	1.2872, 52°	
" "	"	1.2523, 62°	
" "	"	1.1845, 82°.4	
" "	"	1.1041, 102°.4	
" "	"	1.0166, 120°.45	
" "	"	.9560, 130°.3	
" "	"	.8690, 140°.8	
" "	"	.8065, 146°.6	
" "	"	.7317, 151°.75	
" "	"	.6706, 154°.3	
" "	"	.6370, 155°.05	
" "	"	.52, 156°	
Sulphur trioxide. S.	SO_3	1.9546, 13°	Morveau. Watts' Dict.
" " "	"	1.975	Baumgartner.
" " L.	"	1.97, 20°	Bussy. Ann. (2), 26, 411.
" " S.	"	1.92118 } 25°	
" " "	"	1.90915 } 25°	Buff. A. C. P. 4th Supp., 129.
" " "	"	1.90814 } 25°	
" " L.	"	1.81958 } 47°	
" " "	"	1.8105 } 47°	
" " "	"	1.8101 } 47°	
" " S.	"	1.940, 16°	Weber. P. A. 159, 318.
" " "	"	1.9365, 20°	Nasini. Ber. 15, 2885.
Selenium dioxide	SeO_2	3.9538	Clausnizer. A. C. P. 196, 265.
Tellurium dioxide	TeO_2	5.93, 20°	Schafarik. J. P. C. 90, 12.
" "	"	5.7559, 12°.5	F. W. Clarke. A. J. S. (3), 14, 285.
" "	"	5.7841, 14°	

Name.	Formula.	Sp. Gravity.	Authority.
Tellurium dioxide. Octahedral.	$Te O_2$	5.65, 0°	Klein and Morel. C. R. 100, 1140.
" " "	"	5.67, 0°	
" " "	"	5.68, 0°	
" " Orthorhombic.	"	5.88, 0°	
" " "	"	5.90, 0°	
" " "	"	5.91, 0°	
" " Calcined	"	5.68, 0°	
Tellurium trioxide	$Te O_3$	5.0704, 14°.5	F. W. Clarke. A. J. S. (3), 14, 286.
" "	"	5.0794, 11°	
" "	"	5.1118, 11°	
Chromic oxide	$Cr_2 O_3$	5.21, cryst.	Wöhler. See Böttger.
" "	"	4.909	Playfair and Joule. M. C. S. 3, 82.
" "	"	6.2, cryst.	Schiff. J. 11, 161.
" "	"	5.010	Schröder. P. A. 106, 226.
Chromic chromate	$Cr_5 O_9$	4.0, 10°	Geuther. J. 14, 242.
Chromium trioxide	$Cr O_3$	2.676, m. of 2	Playfair and Joule. M. C. S. 2, 448.
" "	"	2.737, 14°, cryst	Ehlers. B. D. Z.
" "	"	2.629, 14°, after fusion.	
" "	"	2.819, 20°	Schafarik. J. P. C. 90, 12.
" "	"	2.775, Extremes	Zettnow. P. A. 143, 474.
" "	"	2.804, Extremes	
Molybdenum dioxide	$Mo O_2$	5.67	Bucholz. N. J. 20, 121.
" "	"	6.44, 16°	Mauro and Panebianco. Ber. 15, 527.
Molybdenum trioxide	$Mo O_3$	3.460	Thomson. See Böttger.
" "	"	3.49	Berzelius. " "
" "	"	4.49, native.	Weisbach. Dana's Min.
" "	"	4.50, native.	
" "	"	4.39, 21°, cryst.	Schafarik. J. P. C. 90, 12.
Tungsten dioxide	$W O_2$	12.1109	Karsten. Schw. J. 65, 394.
Tungsten trioxide	$W O_3$	6.12	D'Elhuyart. Gm. H.
" "	"	5.274, 16°.5	Herapath. P. M. 64, 321.
" "	"	7.1396	Karsten. Schw. J. 65, 394.
" "	"	6.302, cryst.	Nordenskiöld. J. 14, 214.
" "	"	6.384, cryst.	
" "	"	7.16, amorphous.	Zettnow. J. 20, 216.
" "	"	7.232, 17°, cryst.	
Uranous oxide	$U O_2$	10.15	Ebelmen. J. P. C. 27, 385.
Uranoso-uranic oxide	$U_3 O_8$	7.1932	Karsten. Schw. J. 65, 394.
" " "	"	7.31	Ebelmen. J. P. C. 27, 385.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Uranic oxide	UO_3	5.02 } two lots.	Brauner and Watts. P. M. (5), 11, 60.
" "	"	5.26	
Chlorine trioxide. L	Cl_2O_3	1.3298 } 0°	Brandau. Z. C. 13, 47.
" " "	"	1.387	
Iodine pentoxide	I_2O_5	4.250	Filhol. Ann. (3), 21, 415.
" "	"	4.7987, 9°	Kammerer. P. A. 138, 401.
" "	"	4.487, 0°	Ditte. Z. C. 13, 303.
" "	"	5.037, 0°	Ditte. Ann. (4), 21, 10.
" "	"	5.020, 51°	
Manganous oxide	MnO	4.7264, 17°	Herapath. P. M. 64, 321.
" "	"	5.38	Playfair and Joule. M. C. S. 3, 80.
" "	"	5.091	Rammelsberg. J. 18, 878.
" " Manganosite.	"	5.18	Blomstrand. J. 28, 1209.
" "	"	5.010, 4°	Veley. J. C. S. 1882, 65.
Manganoso-manganic oxide.	Mn_3O_4	4.746	Playfair and Joule. M. C. S. 3, 80.
" " "	"	4.653	
" " "	"	4.325	Playfair and Joule. J. C. S. 1, 137.
" " "	"	4.718, artif.	Rammelsberg. J. 18, 878.
" " "	"	4.856, native	
" " "	"	4.80, artificial	Gorgeu. C. R. 96, 1145.
Manganic oxide	Mn_2O_3	4.82, braunite	Haidinger. Gm. H.
" "	"	4.568 } artif.	Playfair and Joule. M. C. S. 3, 80.
" "	"	4.619	
" "	"	4.325, artif.	Rammelsberg. J. 18, 878.
" "	"	4.752, braunite.	
Manganese dioxide	MnO_2	4.819, pyrolusite	Turner. See Böttger.
" "	"	5.026 "	Rammelsberg. J. 18, 878.
" "	"	4.838 "	Breithaupt. Dana's Min.
" "	"	4.880 "	
" "	"	4.826 "	Pisani. Dana's Min.
" "	"	4.965 } polianite.	Dana and Penfield. A. J. S. (3), 35, 246.
" "	"	5.040	
Ferroso-ferric oxide	Fe_3O_4	5.094	Mohs. See Böttger.
" " "	"	4.960	Gerolt. " "
" " "	"	4.900	Leonhard. See Böttger.
" " "	"	5.200	
" " "	"	5.300, 16°.5	Herapath. P. M. 64, 321.
" " "	"	5.400	Boullay. Ann. (2), 43, 266.
" " "	"	5.480	
" " "	"	5.168 } cryst. magnetite.	Kenngott. Dana's Min.
" " "	"	5.180	
" " "	"	5.453	Playfair and Joule. M. C. S. 3, 81.

Name.	Formula.	Sp. Gravity.	Authority.
Ferroso-ferric oxide	Fe_3O_4	5.12, 0°, magnetite.	Kopp.
" " "	"	5.106	Rammelsberg.
" " "	"	5.148 "	
" " "	"	5.185	
" " "	"	4.86 two allotropic varieties	Moissan. Ann. (5), 21, 223.
" " "	"	5.00	
" " "	"	5.09	
" " "	"	5.21 artif. cryst.	Gorgeu. C. R. 104, 1176.
" " "	"	5.25	
Ferric oxide	Fe_2O_3	5.251	Mohs. See Böttger.
" "	"	5.261	Breithaupt.
" "	"	5.959, 16°.5, ppt.	Herapath. P. M. 64, 321.
" "	"	5.225	Boullay. Ann. (2), 43, 266.
" "	"	5.079, native	Neumann. P. A. 23, 1.
" "	"	5.121, 12°.5	Kopp.
" "	"	4.679	Playfair and Joule. M. C. S. 3, 80.
" "	"	5.135, ignit'd	
" "	"	5.241 native	Rammelsberg.
" "	"	5.283	
" "	"	5.191	G. Rose.
" "	"	5.214 "	
" "	"	5.230	
" "	"	5.169, ppt.	H. Rose. P. A. 74, 440.
" "	"	5.037, ignited	
" "	"	3.95, yellow	Tommasi. Les Mondes, 1879.
Nickelous oxide	NiO	5.597	Playfair and Joule. M. C. S. 3, 81.
" "	"	5.745, furnace product.	Genth. J. 1, 444.
" "	"	6.605, cryst.	
" "	"	6.398	Bergemann. J. 11, 683.
" "	"	6.661	Rammelsberg. J. 2, 282.
" "	"	6.8, cryst.	Ebelmen. J. 4, 16.
Nickelic oxide	Ni_2O_3	4.846, 16°.5	Herapath. P. M. 64, 321.
" "	"	4.814	Playfair and Joule. M. C. S. 3, 81.
Cobaltous oxide	CoO	5.597	" "
" "	"	5.750, ignited	
Cobaltoso-cobaltic oxide	Co_3O_4	5.833	Rammelsberg. J. 2, 282.
" " "	"	6.296	
Cobaltic oxide	Co_2O_3	5.322, 16°.5	Herapath. P. M. 64, 321.
" "	"	5.600	Boullay. Gm. H. 1, 69.
" "	"	4.814	Playfair and Joule. M. C. S. 3, 81.
Cuprous oxide	Cu_2O	6.052 16°.5	Herapath. P. M. 64, 321.
" "	"	6.093	
" "	"	5.751	Karsten. Schw. J. 65, 394.

Name.	Formula.	Sp. Gravity.	Authority.
Cuprous oxide	Cu_2O	5.75	Leroyer and Dumas. See Böttger.
" "	"	5.746	Playfair and Joule. M. C. S. 3, 82.
" "	"	5.300	Persoz. J. P. C. 47, 84.
" "	"	5.342	
" "	"	5.375	
Cupric oxide	Cu O	6.401, 16°.5	Herapath. P. M. 64, 321.
" "	"	6.130	Boullay. Ann. (2), 43, 266.
" "	"	6.4304	Karsten. Schw. J. 65, 394.
" "	"	5.90	Playfair and Joule. M. C. S. 3, 82.
" "	"	6.414, ignit'd	
" "	"	6.322	Filhol. Ann. (3), 21, 415.
" "	"	6.130	Persoz. J. P. C. 47, 84.
" "	"	6.225	
" "	"	6.400	
" "	"	6.451, furnace product.	Jenzsch. J. 12, 214.
" "	"	6.400	Hampe. Z. C. 18, 363.
" "	"	6.25, melaconite.	Whitney. J. 2, 728.
" "	"	5.952 "	Rammelsberg. P. A. 80, 287.
Ruthenium dioxide	$Ru O_2$	7.2	Deville and Debray. J. 12, 236.

2d. Double and Triple Oxides.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium uranium oxide	$Na_2 U_3 O_{10}$	6.912	Drenkmann. J. 14, 257.
Delafossite	$Cu'_2 Fe'''_2 O_3$	5.07, 25°	Friedel. C. R. 77, 211.
Spinel	$Mg Al_2 O_4$	3.452, artif.	Ebelmen. J. 4, 12.
"	"	3.48, natural	Breithaupt.
"	"	3.52 "	
"	"	3.523 "	Haidinger. Dana's Min.
"	"	3.631 15°.5, nat.	Church. Geol. Mag. (2), 2, 320.
"	"	3.715	
"	"	3.77	Jeremejew. J. 37, 1918.
Gahnite	$Zn Al_2 O_4$	4.580, artif.	Ebelmen. J. 4, 13.
"	"	4.317	G. Rose.
"	"	4.589	
"	"	4.89	Brush. A. J. S. (3), 1, 28.
"	"	4.91	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Gahnite	$Zn\ Al_2\ O_4$	4.576	Genth and Keller. J. 36, 1843.
" Furnace product.	"	4.49—4.52	Schulze and Stelzner. Z. K. M. 7, 603.
Hercynite	$Fe''\ Al_2\ O_4$	3.91	Zippe. Dana's Min.
"	"	3.95	
Chrysoberyl	$Gl\ Al_2\ O_4$	3.759, artif.	Ebelmen. J. 4, 13.
"	"	3.597	Rose. Dana's Min. From three localities.
"	"	3.689	
"	"	3.734	
"	"	3.835	Kokscharof. J. 14, 976, and J. 15, 715.
" Alexandrite	"	3.644	
"	"	3.734	Nilson and Pettersson. C. R. 91, 232.
"	"	3.700 15°.5	Church. Geol. Mag. (2), 2, 320.
"	"	3.860 15°.5	
Calcium iron oxide	$Ca\ Fe'''_2\ O_4$	4.693	Percy. P. M. (4), 45, 455.
Magnesioferrite	$Mg\ Fe'''_2\ O_4$	4.568	Rammelsberg. J. 12, 776.
"	"	4.611	
"	"	4.638	
Hetaerolite	$Zn\ Mn_2\ O_4$	4.933	Moore. J. C. S. 36, 17.
Zinc iron oxide	$Zn\ Fe'''_2\ O_4$	5.132 cryst.	Ebelmen. J. 4, 13.
" " "	"	5.33 "	Gorgeu. B. S. C. 47, 372.
Zinc chromium oxide	$Zn\ Cr_2\ O_4$	5.309 "	Ebelmen. J. 4, 13.
Manganese chromium oxide.	$Mn\ Cr_2\ O_4$	4.87 "	" "
Chromite	$Fe''\ Cr_2\ O_4$	4.321	Thomson. Dana's Min.
"	"	4.498	Dana's Mineralogy.
"	"	4.568	
Jacobsite	$Mg\ Fe'''_2\ O_4.\ 2\ Mn\ Fe'''_2\ O_4$.	4.75, 16°	Damour. C. R. 69, 168.
Chrompicotite	$2\ Fe''\ Al_2\ O_4.\ 3\ Mg\ Cr_2\ O_4$.	4.115, 20°	Petersen. J. P. C. 106, 137.

IX. INORGANIC SULPHIDES.

1st. Simple Sulphides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen monosulphide	$H_2\ S$	a .9, 1	Faraday. Gm. H. 2, 197.
" "	"	.91, 18°.5	Bleekrode. P. R. S. 37, 355.
Hydrogen persulphide	$H_2\ S_2$ or $H_2\ S_3$?	1.7342	Ramsay. J. C. S. 27, 860.
Sodium sulphide	$Na_2\ S$	2.471	Filhol. Ann. (3), 21, 415.
Potassium sulphide	$K_2\ S$	2.130	" "

Name.	Formula.	Sp. Gravity.	Authority.
Silver sulphide	Ag_2 S	6.8501, artif.	Karsten. Schw. J. 65, 394.
" " Argentite	"	7.269	Dauber. J. 13, 748.
" " "	"	7.317	
" " Acanthite	"	7.31	Kenngott. J. 8, 908.
" " "	"	7.36	
" " "	"	7.164 } extremes.	Dauber. J. 13, 748.
" " "	"	7.326	
" " Daleminzite	"	7.02	Breithaupt. J. 15, 709.
Thallium sulphide	Tl_2 S	8.00	Lamy. J. 15, 185.
Oldhamite	Ca S. (Impure)	2.58	Maskelyne. P. T. 1870, 196.
Zinc sulphide	Zn S	3.9235	Karsten. Schw. J. 65, 394.
" " Blende	"	4.060	Neumann. P. A. 23, 1.
" " "	"	4.063	Henry. J. 4, 756.
" " "	"	4.07	Kuhlmann. J. 9, 832.
" " "	"	4.05	Tschermak. S. W. A. 45, 603.
" " "	"	4.033	Genth. Am. Phil. Soc. 1882.
Cadmium sulphide	Cd S	4.5, artificial	Schüler. J. 6, 367.
" "	"	4.5 "	Söchting. Dana's Min.
" " Greenockite	"	4.605	Karsten. Schw. J. 65, 394.
" " "	"	4.908	Breithaupt. Watts' Dict.
" " "	"	4.80	Brooke. P. A. 51, 274.
Mercuric sulphide	Hg S	8.124	Boullay. Ann. (2), 43, 266.
" "	"	8.0602	Karsten. Schw. J. 65, 894.
" "	"	8.090, cinnabar.	Moore. J. P. C. (2), 2, 819.
" "	"	7.701 } natural, amorphous.	
" "	"	7.748	
" "	"	7.552, artif.	
" "	"	7.81, metacinnabar.	Penfield. A. J. S. (3), 29, 453.
Carbon monosulphide	C S	1.66, s.	Sidot. C. R. 81, 33.
Carbon disulphide	C S_2	1.272	Berzelius and Marcet. Schw. J. 9, 284.
" "	"	1.263	Cluzel. Gm. H.
" "	"	1 2693, 15°.1	Gay Lussac.
" "	"	1.265	Couërbe. Ann. (2), 61, 232.
" "	"	1.2823, 5°–10°	Regnault. P. A. 62, 50.
" "	"	1.2750, 10°–15°	
" "	"	1.2676, 15°–20°	
" "	"	1.29312, 0°	Pierre. C. R. 27, 218.

Name.	Formula.	Sp. Gravity.	Authority.
Carbon disulphide	CS_2	1.29858, 0°	H. L. Buff. A. C. P. 4th Supp., 129.
" "	"	1.27904, 10°	
" "	"	1.26652, 17°	
" "	"	1.227431, 46°	
" "	"	1.2661, 20°	Haagen. P. A. 131, 117.
" "	"	1.2665, 16°.06	Winkelmann. P. A. 150, 592.
" "	"	1.2176, 43°	Ramsay. J. C. S. 35, 463.
" "	"	1.29215, 0°	Thorpe. J. C. S. 37, 363.
" "	"	1.22242, 46°.04	
" "	"	1.2233 } 47°	Schiff. Ber. 14, 2767.
" "	"	1.2234 }	
" "	"	1.2634, 20°	Nasini. Ber. 15, 2883.
" "	"	1.266, 15°.2	Friedburg. C. N. 47, 52.
" "	"	1.26569, 17°.86	Also values for other t°s. Drecker. P. A. (2), 20, 870.
" "	"	1.26446, 18°.58	
" "	"	1.25031, 28°.21	
" "	"	1.23863, 35°.96	
" "	"	1.2233, 46°.5	Schiff. Ber. 19, 560.
Tin monosulphide	$Sn\,S$	4.8523	Karsten. Schw. J. 65, 394.
" "	"	5.267	Boullay. Ann. (2), 43, 266.
" "	"	4.973	Schneider. J. 8, 396.
" "	"	5.0802, 0°	Ditte. C. R. 96, 1791.
Tin disulphide	$Sn\,S_2$	4.415	Boullay. Ann. (2), 43, 266.
" "	"	4.600	Karsten. Schw. J. 65, 394.
Lead sulphide	$Pb\,S$	7.5052, artif.	" "
" " Galena	"	7.539	Breithaupt. J. P. C. 11, 151.
" "	"	6.9238, 4°, pulv	Playfair and Joule. J. C. S. 1, 137.
" " Galena	"	7.568	Neumann. P. A. 23, 1.
" " "	"	7.51	Tschermak. S. W. A. 45, 603.
" "	"	6.77, artificial	Schneider. J. P. C. (2), 2, 91.
Lead sesquisulphide	$Pb_2\,S_3$	6.335	Playfair and Joule. M. C. S. 3, 89.
Cerium sulphide	$Ce_2\,S_3$	5.1	Didier. C. R. 100, 1461.
Thorium sulphide	$Th\,S_2$	8.29	Chydenius. J. 16, 195.
Nitrogen sulphide	$N\,S$	2.22, 15°	Berthelot and Vieille. Ber. 14, 1558.
" "	"	2.1166, 15°	Michaelis. Z. C. 13, 460.
Phosphorus monosulphide	$P\,S$	1.8	Dupré. J. P. C. 21, 253.
Phosphorus hexsulphide	$P\,S_6$	2.02	" "
Tetraphosphorus trisulphide.	$P_4\,S_3$	2.00, 11°	Isambert. C. R. 96, 1501.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Vanadium disulphide	$V_2 S_2$	4.2, scaly	Kay. J. C. S. 37, 728.
" "	"	4.4, powder	
Vanadium trisulphide	$V_2 S_3$	3.7, scaly	" "
" "	"	4.0, powder	
Vanadium tetrasulphide	$V_2 S_4$	4.70, 21°	Schafarik. J. P. C. 90, 12.
Vanadium pentasulphide	$V_2 S_5$	3.0	Kay. J. C. S. 37, 728.
Arsenic disulphide	$As_2 S_2$	3.5444	Karsten. Schw. J. 65, 394.
" "	"	3.240, realgar	Neumann. P. A. 23, 1.
" "	"	3.556	Mohs. See Böttger.
Arsenic trisulphide	$As_2 S_3$	3.459	Karsten. Schw. J. 65, 394.
" "	"	3.48	Haidinger. Dana's Min.
" "	"	3.44—3.45	Guibourt. See Böttger.
" " Dimorphite	"	3.58	Scacchi. J. 5, 842.
Antimony trisulphide	$Sb_2 S_3$	4.7520	Karsten. Schw. J. 65, 394.
" "	"	4.15, amorphous.	Fuchs. Watts' Dict.
" "	"	4.614, black	H. Rose. J. 6, 361.
" "	"	4.641, 16° "	
" "	"	4.280, red	
" "	"	4.421, ppt.	
" "	"	4.226, 26°.7, red 4.223, 23°, ppt.	Cooke. Proc. Am. Acad. 1877.
" "	"	4.228, 28°, gray 4.289, 27 "	
" "	"	4.892	Ditte. C. R. 102, 212.
" "	"	5.012	
" " Stibnite.	"	4.603	Neumann. P. A. 23, 1.
" " "	"	4.516	Haüy. Dana's Min.
" " "	"	4.62	Mohs. " "
Bismuth disulphide	$Bi_2 S_2$	7.29, m. of 5	Werther. J. P. C. 27, 65.
Bismuth trisulphide	$Bi_2 S_3$	7.591, 14°.5	Herapath. P. A. 64, 321.
" "	"	7.0001	Karsten. Schw. J. 65, 394.
" "	"	7.16, native	Forbes. P. M. (4), 29, 4.
Selenium sulphide	Se S	3.056, 0°	Ditte. Z. C. 14, 386.
" "	"	3.035, 52°	
Molybdenite	$Mo S_2$	4.591	Mohs. See Böttger.
"	"	4.444	Seibert. " "
Tungsten disulphide	$W_2 S_2$	6.26, 20°	Schafarik. J. P. C. 90, 12.
Chromic sulphide	$Cr_2 S_3$	4.092	Playfair and Joule. M. C. S. 3, 89.
" "	"	2.79, 10° } two	Schafarik. J. P. C. 90, 12.
" "	"	3.77, 19° } preparations.	
Manganese monosulphide. Alabandite.	Mn S	3.95—4.01	Leonhard. See Böttger.

Name.	Formula.	Sp. Gravity.	Authority.
Manganese monosulphide. Alabandite.	$Mn\ S$	4.036	Bergemann. N. J. 1857, 394.
Hauerite	$Mn\ S_2$	3.463	Von Hauer. J. 1, 1157.
Iron hemisulphide	$Fe_2\ S$	5.80	Playfair and Joule. M. C. S. 3, 88.
Iron monosulphide. Artif.	$Fe\ S$	5.035, m. of 2	" "
" " "	"	4.79	Rammelsberg. J. 15, 263.
" " Troilite	"	4.787	Rammelsberg. J. 1, 1306.
" " "	"	4.817	Rammelsberg. J. 17, 904.
" " "	"	4.75	Smith. J. 8, 1025.
Iron disulphide. Pyrite	$Fe\ S_2$	5.000	Kenngott. J. 6, 780.
" " "	"	5.028	
" " "	"	5.185	Zepharovich. S. W. A. 12, 289.
" " "	"	5.042	Neumann. P. A. 23, 1.
" " Marcasite	"	4.882	" "
" " "	"	4.678	Dana's Mineralogy.
" " "	"	4.847	
Ferric sulphide	$Fe_2\ S_3$	4.246	Playfair and Joule. M. C. S. 3, 88.
" "	"	4.41	Rammelsberg. J. 15, 262.
Complex sulphide of iron	$Fe_8\ S_9$	4.494	Rammelsberg. J. 15, 195.
Pyrrhotite	$Fe_7\ S_8$	4.584	Kenngott. S. W. A. 9, 575.
"	"	4.564	Rammelsberg. Dana's Mineralogy.
"	"	4.580	
"	"	4.640	
Nickel hemisulphide	$Ni_2\ S$	6.05	Playfair and Joule. M. C. S. 3, 88.
Millerite	$Ni\ S$	4.601	Kenngott. S. W. A. 9, 575.
"	"	5.65	Rammelsberg. Dana's Mineralogy.
Polydymite	$Ni_4\ S_5$	4.808 } 18°.7	Laspeyres. J. P. C. (2), 14, 397.
"	"	4.816	
Beyrichite	$Ni_5\ S_7$	4.7	Liebe. N. J. 1871, 840.
Cobalt disulphide	$Co\ S_2$	4.269	Playfair and Joule. M. C. S. 3, 88.
Cobaltic sulphide	$Co_2\ S_3$	4.8	Hoffmann's Tables.
Copper hemisulphide	$Cu_2\ S$	5.792, 17.7	Herapath. P. M. 64, 321.
" "	"	5.9775	Karsten. Schw. J. 65, 394.
" "	"	5.71	Kopp. J. 16, 5.
" "	"	5.7022	Thomson. Dana's Min.
" "	"	5.521—5.795	Scheerer. P. A. 65, 292.
" " Artif. cryst.	"	5.79	Doelter. Z. K. M. 11, 29.
" " two methods	"	5.809	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Copper monosulphide	Cu S	4.1634	Karsten. Schw. J. 65, 394.
" " Covellite	"	4.636	Zepharovich. J. 7, 810.
Palladium hemisulphide	$Pd_2 S$	7.303, 15°	Schneider. P. A. 141, 532.
Platinum monosulphide	Pt S	8.847, 16°.25	Böttger. J. P. C. 3, 267.
Platinum disulphide	$Pt S_2$	7.224, 18°.75	" "
" "	"	5.27	Schneider. P. A. 138, 604.
Platinum sesquisulphide	$Pt_2 S_3$	5.52	" "

2d. Sulpho-Salts of Arsenic, Antimony, and Bismuth.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Proustite	$Ag_3 As S_3$	5.524	Mohs.
"	"	5.53—5.59	Breithaupt. See Böttger.
"	"	5.552, 13°	G. Rose. P. A. 15, 472.
Xanthoconite	$Ag_9 As_3 S_{10}$	4.112—4.159	Breithaupt. J. P. C. 20, 67.
Guitermannite	$Pb_3 As_2 S_6$	5.94	Hillebrand. Bull. No. 20., U. S. G. S., 106.
Sartorite	$Pb As_2 S_4$	5.405	Waltershausen. J. 8, 914.
"	"	5.393	Waltershausen. J. 8, 914.
"	"	5.409	Waltershausen. J. 8, 914.
Dufrenoysite	$Pb_2 As_2 S_5$	5.5616	Landolt. P. A. 122, 373.
"	"	5.549	Damour. Ann. (3), 14, 379.
"	"	5.561	v. Rath. J. 17, 827.
Enargite	$Cu'_3 As S_4$	4.362	Kenngott. Dana's Min.
"	"	4.430	Breithaupt. J. 8, 702.
"	"	4.445	Breithaupt. J. 8, 702.
"	"	4.37	Kobell. J. 18, 872.
"	"	4.34	Root. J. 21, 998.
"	"	4.43	Burton. J. 21, 998.
" Guayacanite	"	4.39	Field. J. 12, 771.
" Clarite	"	4.46	Sandberger. N. J. 1875, 382.
" Luzonite	"	4.42	Weisbach. M. P. M. 1874, 257.
Julianite	$Cu_4 As S_4$	5.12	Websky. Z. G. S. 1871, 486.
Binnite	$Cu_6 As_4 S_9$	4.477	Dana's Mineralogy.
Tennantite	$Cu'_8 As_2 S_7$	4.375	Phillips. See Böttger.
"	"	4.530	Scheerer. P. A. 65, 298.
"	"	4.622	Harrington. J. 37, 1911.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium sulphantimonate	$Na_3\,Sb\,S_4.\ 9\,H_2\,O$	1.804	Schröder. Dm. 1873.
" "	"	1.807	
Pyrargyrite	$Ag_3\,Sb\,S_3$	5.831	Mohs.
"	"	5.73—5.84	Breithaupt. See Böttger.
Miargyrite	$Ag\,Sb\,S_2$	5.214	Weisbach. J. 18, 869.
"	"	5.242	
"	"	5.0725 } 20°	Rumpf. Z. K. M. 7, 513.
"	"	5.0823	
" Artificial	"	5.28	Doelter. Z. K. M. 11, 29.
Stephanite	$Ag_5\,Sb\,S_4$	6.269	Mohs. P. A. 15, 474.
"	"	6.275, 21°	H. Rose.
"	"	6.28, 18°	Frenzel. J. 27, 1239.
Polybasite	$Ag_9\,Sb\,S_6$	6.214	Dana's Mineralogy.
"	"	6.009	Genth. Am. Phil. Soc., 1885.
Polyargyrite	$Ag_{24}\,Sb_2\,S_{15}$	6.933 } 18°.2	Petersen. J. 22, 1197.
"		7.014	
Livingstonite	$Hg\,Sb_2\,S_4$	4.81	Barcena. A. J. S. (3), 8, 146.
" Artificial	"	4.928, 32°	Baker. C. N. 42, 196.
Jamesonite	$Pb_2\,Sb_2\,S_5$	5.616, 19°	Schaffgotsch. P. A. 38, 403.
"	"	5.601	Löwe. Dana's Min.
" Massive	"	5.6788	Rammelsberg. P. A. 77, 240.
" Artificial	"	5.5	Doelter. Z. K. M. 11, 29.
Zinkenite	$Pb\,Sb_2\,S_4$	5.303 } 12°.5	G. Rose. P. A. 7, 91.
"	"	5.310	
"	"	5.21, 18°	Hillebrand. Bull. 20, U. S. G. S.
Boulangerite	$Pb_3\,Sb_2\,S_6$	5.688—5.941	Hausmann. P. A. 46, 282.
" Massive	"	5.809—5.877	Zepharovich. S. W. A. 56, (1), 30.
" Fibrous	"	5.69—6.086	
Meneghinite	$Pb_4\,Sb_2\,S_7$	6.339	v. Rath. J. 20, 974.
"	"	6.445	
"	"	6.33	Harrington. J. 37, 1911.
Geocronite	$Pb_5\,Sb_2\,S_8$	6.407	Apjohn. Dana's Min.
"	"	6.43, 15°	Sauvage. Ann. des Mines, (3), 17, 525.
"	"	6.45—6.47, 15°	Kerndt. P. A. 65, 302.
Plagionite	$Pb_4\,Sb_6\,S_{13}$	5.40	Rammelsberg. P. A. 47, 495.
Epiboulangerite	$Pb_6\,Sb_4\,S_{15}$	6.309	Websky. J. 22, 1198.
Semseyite	$Pb_7\,Sb_6\,S_{16}$	5.9518	Sipöcz. Ber. 19, 95.
Freieslebenite	$Pb_2\,Ag_3\,Sb_3\,S_8$	6.194	Hausmann. Dana's Min.
"	"	6.230	v. Payr. J. 13, 746.
"	"	6.35	Vrba. S. W. A. 63, 143.
" Diaphorite	"	5.902	Zepharovich. S. W. A. 63, 143.

Name.	Formula.	Sp. Gravity.	Authority.
Brongniardite	$Pb\ Ag_2\ Sb_2\ S_5$	5.950, 18°	Damour. Ann. d. Mines, (4), 16, 227.
Chalcostibite	$Cu\ Sb\ S_2$	4.748	H. Rose. Dana's Min.
"	"	5.015	Breithaupt. Dana's Min.
Famatinite	$Cu_3\ Sb\ S_4$	4.57	Stelzner. M. P. M. 1873, 242.
Guejarite	$Cu_2\ Sb_4\ S_7$	5.03	Cumenge. B. S. M. 2, 201.
Tetrahedrite	$Cu_8\ Sb_2\ S_7$	4.730	Wittstein. J. 8, 912.
"	"	4.58	Sandmann. A. C. P. 89, 368.
"	"	4.90	Kuhlemann. J. 9, 834.
"	"	4.885	Genth. Am. Phil. Soc. 1885.
Bournonite	$Cu'\ Pb\ Sb\ S_3$	5.703—5.796	Zincken. J. 2, 724.
"	"	5.726—5.855	Bromeis. J. 2, 724.
"	"	5.726—5.863	Rammelsberg. J. 2, 724.
"	"	5.80	Field. J. 14, 374.
"	"	5.826	Wait. J. 26, 1147.
"	"	5.737—5.86	Hidegh. J. 37, 1911.
"	"	5.7659	Sipöcz. Ber. 19, 95.
" Artificial	"	5.719	Doelter. Z. K. M. 11, 29.
Berthierite	$Fe\ Sb_2\ S_4$	4.043	Pettko. J. 1, 1159.
Silver bismuth glance*	$Ag\ Bi\ S_2$	6.92	Rammelsberg. Z. K. M. 3, 101.
Galenobismutite	$Pb\ Bi_2\ S_4$	6.88	Sjögren. G. F. F. 4, 109.
Cosalite	$Pb_2\ Bi_2\ S_5$	6.22—6.33	Frenzel. J. 27, 1238.
Beegerite	$Pb_6\ Bi_2\ S_9$	7.273	König. J. 34, 1355.
Rezbanyite	$Pb_4\ Bi_{10}\ S_{19}$	6.09	Frenzel. J. 36, 1835.
"	"	6.38	Frenzel. J. 36, 1835.
Chiviatite	$Pb_2\ Bi_6\ S_{11}$	6.920	Rammelsberg. P. A. 88, 320.
Emplectite	$Cu\ Bi\ S_2$	5.18, 5°	Weisbach. J. 19, 916.
Wittichenite	$Cu_3\ Bi\ S_3$	4.3	Hilger. J. 18, 870.
Klaprotholite	$Cu_6\ Bi_4\ S_9$	4.6	Petersen. N. J. 1868, 415.
Aikinite	$Cu'\ Pb\ Bi\ S_3$	6.757	Frick. P. A. 31, 530.
"	"	6.1	Chapman. J. 1, 1158.
Kobellite	$Pb_3\ Bi\ Sb\ S_6$	6.29	Satterberg. P. A. 55, 685.
"	"	6.32	Satterberg. P. A. 55, 685.
"	"	6.145	Rammelsberg. J. P. C. 86, 340.

* **Alaskaite, a lead silver salt similar to this, has a sp. gr. 6.878. Koenig, Z. K. M. 6, 42.**

3d. Miscellaneous Double and Oxy-Sulphides.

Name.	Formula.	Sp. Gravity.	Authority.
Thallium potassium sulphide.	$K\ Tl\ S_2$	4.268	Schneider. P. A. 139, 661.
Iron potassium sulphide	$K\ Fe'''\ S_2$	2.563	Preis. J.P.C.107,10.
Sodium platinum sulphide	$Na\ Pt_2\ S_3$	6.27, 15°	Schneider. P. A. 138, 604.
Potassium platinum sulphide.	$K\ Pt_2\ S_3$	6.44, 15°	" "
Stromeyerite	$Ag\ Cu'\ S$	6.26	Kopp. J. 16, 5.
"	"	6.255	Stromeyer. Schw. J. 19, 325.
Jalpaite	$Ag_3\ Cu'\ S_4$	6.877	Breithaupt. J. 11, 682.
"	"	6.890	
Sternbergite	$Ag\ Fe_2\ S_3$	4.215	Dana's Mineralogy.
Silver gold sulphide	$Ag_{10}\ Au_4\ S_{11}$	8.159	Muir. B.S.C.18,222.
Argyrodite	$Ag_6\ Ge\ S_5$	6.085, 15°	Richter. Quoted by Winkler.
"	"	6.093 } 12°	Winkler. J. P. C. (2), 34, 187.
"	"	6.111	
Christophite	$Zn_2\ Fe\ S_3$	3.911—3.931	Breithaupt. B. H. Ztg. 22, 27.
Guadalcazarite	$Zn\ Hg_6\ S_7$	7.15	Petersen. J. 25,1093
Bornite	$Fe\ Cu_3\ S_3$	5.030	Rammelsberg. Z. G. S. 18, 19.
"	"	4.432	Forbes. J. 4, 758.
"	"	4.91	Katzer. M. P. M. 9, 404.
Iron copper sulphide. Artif.	$Fe_4\ Cu_9\ S_{10}$	4.85	Doelter. Z. K. M. 11, 29.
Barnhardtite	$Fe_2\ Cu_4\ S_5$	4.521	Genth. J. 8, 910.
Chalcopyrite	$Fe\ Cu\ S_4$	4.185	Forbes. J. 4, 759.
"	"	4.1—4.3	Dana's Mineralogy.
" Artificial	"	4.196	Doelter. Z. K. M. 11, 29.
Iron copper sulphide. Artif.	$Fe_4\ Cu_4\ S_7$	4.999	" "
Furnace product. Cryst.	$Fe_5\ Cu_4\ S_9$	3.97	Brögger. Z. K. M. 3, 495.
Cubanite	$Fe_2\ Cu\ S_4$	4.026	Breithaupt. P. A. 59, 325.
"	"	4.042	
"	"	4.18	Smith. J. 7, 810.
Chalcopyrrhotite	$Fe_4\ Cu\ S_6$	4.28	Blomstrand. Dana's Min., 2d Append.
Carrollite	$Co\ Cu\ S_2$	4.58	Faber. J. 5, 840.
"	"	4.85	Smith and Brush. J. 6, 782.
Pentlandite	$Fe\ Ni_2\ S_3$	4.6	Scheerer. P. A. 58, 316.
Horbachite	$Fe_8\ Ni_2\ S_{15}$	4.43	Knop. N. J. 1873, 523.
Daubreelite	$Fe\ Cr_2\ S_4$	5.01	Smith. J.C.S.36,38.
Bismuth nickel sulphide	$Bi_{14}\ Ni_5\ S_2$	9.15	Werther. J. 5, 389.
Voltzite	$4\ Zn\ S.\ Zn\ O$	3.5—3.8	Vogl. J. 6, 786.
Kermesite	$2\ Sb_2\ S_3.\ Sb_2\ O_3$	4.5—4.6	Dana's Mineralogy.

Castillite, Grünauite, and Stannite are omitted as having too indefinite composition

X. SELENIDES.

Name.	Formula.	Sp. Gravity.	Authority.
Naumannite	Ag_2 Se	8.0	G. Rose. P. A. 14, 471.
Zinc selenide	Zn Se	5.40, 15°	Margottet. J. C. S. 32, 570.
Cadmium selenide	Cd Se	8.789	Little. J. 12, 94.
" "	"	5.80	Margottet. J. C. S. 32, 570.
Mercurous selenide	Hg_2 Se	8.877	Little. J. 12, 95.
Tiemannite	Hg Se	7.274	Dana's Mineralogy.
"	"	7.1—7.37	Kerl. J. 5, 837.
"	"	8.187	Penfield. A. J. S.
"	"	8.188	(3), 29, 449.
Lead selenide. Artificial	Pb Se	8.154	Little. J. 12, 95.
" " Clausthalite	"	6.8	Zinken. P. A. 3, 274.
Ferric selenide	Fe_2 Se_3	6.38	Little. J. 12, 94.
Nickel selenide	Ni Se	8.462	" "
Cobalt selenide	Co Se	7.647	" "
Berzelianite	Cu'_2 Se	6.71	Nordenskiöld. J. 20, 977.
Copper selenide	Cu Se	6.655	Little. J. 12, 95.
Arsenic triselenide	As_2 Se_3	4.752	" "
Bismuth triselenide	Bi_2 Se_3	6.82	Schneider. J. 8, 386.
" "	"	7.406	Little. J. 12, 95.
" " Frenzelite	"	6.25, 21°	Frenzel. N. J. 1874, 679.
" " Guanajuatite.	"	6.62	Fernandez. Dana's Min., 3d App.
Tin monoselenide	Sn Se	5.24, 15°	Schneider. J. P. C. 98, 236.
" "	"	6.179, 0°	Ditte. C. R. 96, 1792.
Tin diselenide	Sn Se_2	5.133	Little. J. 12, 95.
" "	"	4.85	Schneider. J. P. C. 98, 236.
Eucairite	Cu' Ag Se	7.48—7.51	Nordenskiöld. J. 20, 977.
Crookesite	(Cu Ag Tl)$_2$ Se	6.90	" "
Lehrbachite	(Pb Hg) Se	7.804—7.876	Dana's Mineralogy.
Zorgite	(Pb Cu) Se	6.38	Pisani. J. 32, 1183.
"	(Pb Cu)$_x$ Se_2	6.26	" "

XI. TELLURIDES.

Name.	Formula.	Sp. Gravity.	Authority.
Hessite	Ag_2Te	8.412	G. Rose. P. A. 18, 64.
"	"	8.565	
"	"	8.178	Genth. J. 27, 1233.
"	"	8.318	Becke. Z. K. M. 6, 205.
Zinc telluride	$ZnTe$	6.34, 15°	Margottet. J. C. S. 32, 570.
Cadmium telluride	$CdTe$	6.20, 15°	" "
Coloradoite	$HgTe$	8.627	Genth. Z. K. M. 2, 4.
Tin telluride	$SnTe$	6.478, 0°	Ditte. C. R. 96, 1793.
Altaite	$PbTe$	8.159	G. Rose. P. A. 18, 64.
"	"	8.060	Genth. J. 27, 1233.
Antimony telluride	Sb_2Te_3	6.47, 13°	Bödeker and Giesecke. B. D. Z.
" "	"	6.51, 13°	
Joseite	Bi_3Te	7.924—7.936	Dana's Mineralogy.
Wehrlite	Bi_3Te_2	8.44	Wehrle. Dana's Min.
Tetradymite	Bi_2Te_3	7.237	Genth. J. 5, 833.
"	"	7.868	Jackson. J. 12, 770.
"	"	7.941	Genth. J. 13, 744.
"	"	7.642, 18°	Balch. J. 16, 794.
Calaverite	$AuTe_4$	9.043	Genth. Z. K. M. 2, 6.
Sylvanite	$AuAgTe_3$	7.943	Genth. J. 27, 1233.
Petzite	$AuAg_3Te_2$	9.010	" "
"	"	9.020	
Tapalpite	$Ag_2Bi_2STe_2$	7.803	Rammelsberg. Z. G. S. 21, 81.

XII. PHOSPHIDES.

Name.	Formula.	Sp. Gravity.	Authority.
Silver phosphide	Ag_2P_3	4.63	Schrötter. S. W. A. 1849, 301.
Zinc phosphide	Zn_3P_2	4.76	" "
" "	"	4.72	Hayer. J. C. S. 32, 113.
Tin monophosphide	SnP	6.56	Schrötter. S. W. A. 1849, 301.
" "	"	6.793	Natanson and Vortmann. Ber. 10, 1460.
Tin diphosphide	SnP_2	4.91, 12°	Emmerling. Ber. 12, 155.
Chromium phosphide	CrP	4.68	Martius. J. 11, 160.
Manganese phosphide	Mn_5P_2	5.951	Wöhler. J. 6, 359.
" "	Mn_3P	4.94	Schrötter. S. W. A. 1849, 301.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Iron phosphide	$Fe_3 P$	6.28	Hvoslef. J. 9, 285.
" "	$Fe_3 P_4$	5.04	Freese. J. 20, 284.
Nickel phosphide	$Ni_5 P$	7.283	Jannetaz. J. C. S. 44, 651.
" "	$Ni_3 P_2$	5.99	Schrötter. S.W.A. 1849, 301.
Cobalt phosphide	$Co_3 P_2$	5.62	" "
Tricopper phosphide	$Cu_3 P$	6.75	" "
" "	"	6.59	Hvoslef. J. 9, 285.
" "	"	6.350	Sidot. J.R.C.5,75.
Copper monophosphide	Cu P	5.14	Emmerling. Ber. 12, 153.
Molybdenum monophosphide.	Mo P	6.167	Rautenberg. J. 12, 163.
Tungsten hemiphosphide	$W_2 P$	5.207	Wöhler. J. 4, 347.
Palladium diphosphide	$Pd P_2$	8.25	Schrötter. S. W. A. 1849, 301.
Platinum diphosphide	$Pt P_2$	8.77	" "
Iridium hemiphosphide *	$Ir_2 P$	13.768	Clarke. A. C. J. 5, 231.
Gold phosphide	$Au_2 P_3$	6.67	Schrötter. S. W. A. 1849, 301.

XIII. ARSENIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver arsenide	Ag As	8.51	Descamps. J. Ph. C. (4), 27, 424.
Trisilver diarsenide	$Ag_3 As_2$	9.01	" "
Trisilver arsenide	$Ag_3 As$	9.51	" "
" " Huntilite	"	7.47	Wurtz. Dana's Min., 3d App.
Tricopper diarsenide	$Cu_3 As_2$	6.94	Descamps. J. Ph. C. (4), 27, 424.
Dicopper arsenide	$Cu_2 As$	7.76	" "
Tricopper arsenide	$Cu_3 As$	7.81	" "
" " Domeykite	"	7.75	Genth. J. 15, 708.
Algodonite	$Cu_6 As$	7.603	Genth. A. J. S. (2), 33, 192.
"	"	6.902	Field. J. 10, 655.
Whitneyite	$Cu_9 As$	8.408	Genth. J. 12, 771.
"	"	8.246 } 21°	Genth. J. 15, 708.
"	"	8.471 } 21°	Genth. J. 15, 708.
Tricadmium arsenide	$Cd_3 As$	6.26	Descamps. J. Ph. C. (4), 27, 424.
Tin hemiarsenide	$Sn_2 As$	7.001, 18°	Bödeker. B. D. Z.
Tin diarsenide	$Sn As_2$	6.56	Descamps. J. Ph. C. (4), 27, 424.
Lead arsenide	Pb As	9.55	" "
Trilead tetrarsenide	$Pb_3 As_4$	9.65	" "

* Commercial "cast iridium." Contains several per cent. of the phosphides of rhodium and ruthenium, with possibly a little phosphide of osmium.

Name.	Formula.	Sp. Gravity.	Authority.
Trilead diarsenide	$Pb_3\,As_2$	9.76	Descamps. J. Ph. C. (4), 27, 424.
Kaneite	Mn As	5.55	Kane. Dana's Min.
Leucopyrite	$Fe_2\,As_3$	6.659	Breithaupt. P. A. 9, 115.
"	"	6.848	
Lölingite	$Fe\,As_2$	6.246, in mass.	Behncke. J. 9, 831.
"	"	6.321, pulv.	
"	"	7.400	Hillebrand. A. J. S. (3), 27, 353.
Trinickel arsenide	$Ni_3\,As$	7.71	Descamps. J. Ph. C. (4), 27, 424.
Niccolite	Ni As	7.663	Scheerer. P. A. 65, 292.
"	"	7.39, 16°	Ebelmen. Ann. d. Mines (4), 11, 55.
"	"	7.314	Genth. J. 36, 1829.
Rammelsbergite	$Ni\,As_2$	7.099—7.188	Breithaupt. Dana's Min.
"	"	6.9	McCay. J. 37, 1905.
Smaltite	$Co\,As_2$	6.84	Rose. J. 5, 836.
Skutterudite	$Co\,As_3$	6.78	Scheerer. P. A. 42, 553.
Antimony hemiarsenide	$Sb_2\,As$	6.46	Descamps. J. Ph. C. (4), 27, 424.
Allemontite	$Sb\,As_3$	6.13	Thomson. Dana's Min.
"	"	6.203	Rammelsberg. Dana's Min.
Bismuth arsenide	$Bi_3\,As_4$	8.45	Descamps. J. Ph. C. (4), 27, 424.
Gold arsenide	$Au_4\,As_3$	16.20	" "
O'Rileyite	$Cu'_2\,Fe_8\,As_5$	7.343—7.428	Waldie. J. 24, 1133.

XIV. ANTIMONIDES.*

Name.	Formula.	Sp. Gravity.	Authority.
Dyscrasite. Stibiotriargentite.	$Ag_3\,Sb_2$	9.611	Petersen. P. A. 137, 377.
" "	"	9.77	
Dyscrasite. Stibiohexargentite.	$Ag_6\,Sb_2$	10.027	" "
Zinc antimonide	Zn Sb	6.383	Cooke. P. M. (4), 19, 413.
" "	"	6.384	
Trizinc diantimonide	$Zn_3\,Sb_2$	6.327	" "
Breithauptite	Ni Sb	7.541	Breithaupt. Dana's Min.
Tin antimonide*	$Sn_2\,Sb$	7.07, 19°	Bödeker. B. D. Z.

* Compare also the table of alloys.

XV. SULPHIDES WITH ARSENIDES OR ANTIMONIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Arsenopyrite	Fe S As	6.269	Kenngott. S. W. A. 9, 584.
"	"	6.21	Vogel. J. 8, 907.
"	"	6.095, in mass.	Potyka. J. 12, 772.
"	"	6.004, pulv.	Potyka. J. 12, 772.
"	"	6.255	Forbes. J. 18, 871.
"	"	6.16	Zepharovich. S. W. A. 56 (1), 42.
"	"	6.05—6.07	McCay. J. 37, 1905.
Pacite	$Fe_5\ S_2\ As_8$	6.297	Breithaupt and Weisbach. B. H. Ztz. 25, 167.
"	"	6.303	Breithaupt and Weisbach. B. H. Ztz. 25, 167.
Glaucopyrite	$Fe_{13}\ S_2\ As_{24}$	7.181	Sandberger. J. P. C. (2), 1, 230.
Glaucodot	(Co Fe) S As	5.975—6.003	Breithaupt. P. A. 67, 127.
"	"	5.905—6.011	Schrauf and Dana. S. W. A. 69, 153.
Cobaltite	Co S As	6.0—6.3	Dana's Mineralogy.
Gersdorffite	Ni S As	5.49	Forbes. J. 21, 997.
"	"	5.65	Forbes. J. 21, 997.
"	"	6.1977	Sipöcz. Ber. 19, 95.
Ullmannite	Ni S Sb	6.506, 20°	Rammelsberg. P. A. 64, 189.
"	"	6.803	Jannasch. J. 36, 1832.
"	"	6.883	Jannasch. J. 36, 1832.
Corynite	Ni S (As Sb)	5.994	Zepharovich. J. 18, 872.
Wolfachite	"	6.372	Sandberger. J. 22, 1193.
Alloclasite	$Co_3\ S_4\ Bi_4\ As_6$	6.6	Tschermak. J. 19, 919.
"	"	6.23—6.5	Frenzel. J. 36, 1831.

XVI. HYDRIDES, BORIDES, CARBIDES, SILICIDES, NITRIDES, ETC.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium hydride	$Na_2\ H$	0.959	Troost and Hautefeuille. C. R. 78, 970.
Palladium hydride	$Pd_3\ H_2$	10.8033	Dewar. P. M. (4), 47, 334.
" "	$Pd_2\ H$	11.06	Troost and Hautefeuille. C. R. 78, 970.
Columbium hydride	Cb H	6.0 to 6.6	Marignac. J. 21, 214. Supposed to be metal.
" "	"	6.15 to 7.37	Marignac. J. 21, 214. Supposed to be metal.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Platinum boride	Pt B	17.32	Martius. J. 11, 210.
Iron silico-carbide	$Fe_6 Si_2 C$	6.6	Colson. J. C. S. 42, 933.
Titanium carbide	Ti C, impure	5.10	Shimer. J. A. C. 1, 4.
Iron silicide	$Fe_2 Si$	6.611	Hahn. J. 17, 264.
Platinum silicide	$Pt_3 Si_2$	14.1	Colson. Ber. 15, 724.
" "	$Pt_9 Si$	18.97	Memminger. A. C. J. 7, 172.
Aluminum titanide	$Al_4 Ti$	3.11, 16°	Levy. C. R. 106, 66.
Aluminum zirconide (?)	$Al_3 Zr$, or $Al_6 Zr_2 Si$	3.629	Melliss. Göttingen Doct. Diss., 1870.
Ammonia. Liquefied	$N H_3$	.731, 15°.5	Faraday. P.T. 1845, 155.
" "	"	.6234, 0°	Jolly. J. 14, 165.
" "	"	.6492, —10°	D'Andreéff. Ann. (3), 56, 317
" "	"	.6429, —5°	D'Andreéff. Ann. (3), 56, 317
" "	"	.6364, 0°	D'Andreéff. Ann. (3), 56, 317
" "	"	.6298, 5°	D'Andreéff. Ann. (3), 56, 317
" "	"	.6230, 10°	D'Andreéff. Ann. (3), 56, 317
" "	"	.6160, 15°	D'Andreéff. Ann. (3), 56, 317
" "	"	.6089, 20°	D'Andreéff. Ann. (3), 56, 317
Titanium nitride	$Ti_2 N_2$	5.28, 18°	Friedel and Guérin. C. R. 82, 974.
Iron nitride. Impure	$Fe_5 N_2$	3.147	Silvestri. Ber. 8, 1356.

XVII. HYDROXIDES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium hydroxide	Na O H	2.130	Filhol. Ann. (3), 21, 415.
" "	"	1.723	W. C. Smith. Am. J. P. 53, 145.
" "	$2 Na O H. 7 H_2 O$	1.405	Hermes. J. 16, 178.
Potassium hydroxide	K O H	2.100	Dalton.
" "	"	2.044	Filhol. Ann. (3), 21, 415.
" "	"	1.958	W. C. Smith. Am. J. P. 53, 145.
Brucite	$Mg (O H)_2$	2.36	Hermann. J. 14, 979.
"	"	2.376	Beck. J. 15, 718.
" Artif. cryst.	"	2.36, 15°	Schulten. C. R. 101, 72.
Zinc hydroxide	$Zn (O H)_2$	2.677	Nicklés. J. 1, 435.
" "	"	3.053	Filhol. Ann. (3), 21, 415.
Cadmium hydroxide. Cryst.	$Cd (O H)_2$	4.79, 15°	Schulten. C. R. 101, 72.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Calcium hydroxide	Ca $(O H)_2$	2.078	Filhol. Ann. (3), 21, 415.
Strontium hydroxide	Sr $(O H)_2$	3.625	“ “
“ “	Sr $(O H)_2 . 8 H_2 O$	1.396	“ “
“ “	“	1.911, 16°	Filhol. J. P. C. 36, 37.
Barium hydroxide	Ba $(O H)_2$	4.495	Filhol. Ann. (3), 21, 415.
“ “	Ba $(O H)_2 . 8 H_2 O$	1.656	“ “
“ “	“	2.188, 16°	Filhol. J. P. C. 36, 37.
Lead hydroxide	Pb $(O H)_2 . 2$ Pb O	7.592, 0°	Ditte. J. C. S. 42, 928.
Lead oxyhydroxide	Pb $(O H)_2$ O	6.267	Wernicke. J. P. C. (2), 2, 419.
Manganese hydroxide. Cryst.	Mn $(O H)_2$	3.258, 15°	Schulten. C. R. 105, 1266.
Manganese oxyhydroxide	Mn $(O H)_2$ O	2.564	Wernicke. J. P. C. (2), 2, 419.
“ “	“	2.596	
Manganite	$Mn_2 (O H)_2 O_2$	4.335	Rammelsberg. J. 18, 878.
Manganese hydroxide	$Mn_{12} H_2 O_{24}$	4.750 4°	Veley. J. C. S. 41, 65.
“ “	“	4.800	
“ “	$Mn_{24} H_{16} O_{53}$	4.671 4°	“ “
“ “	“	4.681	
Turgite	$Fe_4 (O H)_2 O_5$	3.56—3.74	Hermann. Dana's Min.
“	“	4.681	Bergemann. J. 12, 771.
“	“	4.14	Brush. A. J. S. (2), 44, 219.
Ferric oxyhydroxide	$Fe_2 (O H)_2 O_2$	2.91	Brunck and Graebe. Ber. 13, 725.
“ “	“	2.92	
“ “ Göthite	“	4.11	Yorke. P. M. (3), 27, 265–267.
“ “ “	“	4.19	
“ “ “	“	4.24	
Limonite	$Fe_4 (O H)_6 O_3$	3.6—4.0	Dana's Mineralogy.
“	“	3.908	Bergemann. Dana's Min.
Ferric hydroxide	$Fe_2 (O H)_6$	3.77, precip.	Yorke. P. M. (3), 27, 269.
“ “ Limnite	“	2.69	Church. J. 18, 879.
Nickelic oxyhydroxide	$Ni_2 (O H)_4$ O	2.741	Wernicke. J. P. C. (2), 2, 419.
Cobaltic oxyhydroxide	$Co_2 (O H)_4$ O	2.483	“ “
Heterogenite	$Co_5 O_7 . 6 H_2 O$	3.44	Frenzel. J. P. C. (2), 5, 404.
Copper hydroxide	Cu $(O H)_2$	3.368	Schröder. Dm. 1873.
Diaspore	Al (O H) O	3.39	Jackson. A. J. S. (2), 42, 108.
“	“	3.343	Shepard. A. J. S. (2), 50, 96.
Gibbsite	Al $(O H)_3$	2.387	Hermann. J. 1, 1164.
“	“	2.389	Silliman, Jr. J. 2, 389.
Stibiconite	$Sb_2 (O H)_2 O_3$	5.28	Blum and Delffs. J. P. C. 40, 318.

Name.	Formula.	Sp. Gravity.	Authority.
Antimonic hydroxide	$Sb(OH)_5$	6.6	Boullay. Dana's Min.
Bismuth oxyhydroxide	$Bi(OH)_2O$	5.571	Wernicke. J. P. C. (2), 2, 419.
" "	"	5.8, 20°	Muir, Hoffmeister, and Robbs. J. C. S. 39, 32.
Metabismuthic hydroxide	$Bi(OH)O_2$	5.75, 20°	" "
Uranyl hydroxide	$U(OH)_2O_2$	5.926, 15°	Malaguti. J. P. C. 29, 233.
Eliasite	$U(OH)_4O$	4.087—4.237	Zepharovich. Dana's Min.
Gummite	$U(OH)_6$	3.9—4.20	Breithaupt. Dana's Min.
Chalcophanite	$ZnMn_2O_5.2H_2O$	3.907	Moore. J. C. S. 36, 17.
Namaqualite	$Cu_2Al(OH)_4.2H_2O$	2.49	Church. J. C. S. 23, 1.
Hydrotalcite	$AlMg_3(OH)_9.3H_2O$	2.04	Hermann. J. 1, 1168.

XVIII. CHLORATES AND PERCHLORATES.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen chlorate, or chloric acid.	$HClO_3.7H_2O$	1.282, 14°.2	Kammerer.* P. A. 138, 390.
Sodium chlorate	$NaClO_3$	2.467	Berthelot.
" "	"	2.289	Bödeker. B. D. Z.
Potassium chlorate	$KClO_3$	2.32643, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	2.350, 17°.5	Kremers. J. 10, 67.
" "	"	2.325	Buignet. J. 14, 15.
" "	"	2.323	Holker. P. M. (3), 27, 213.
" "	"	2.325, m. of 5	Schröder. Dm. 1873.
" "	"	2.246 } Extremes	Schröder. Dm. 1873.
" "	"	2.364 } Extremes	Schröder. Dm. 1873.
" "	"	2.167	W. C. Smith. Am. J. P. 53, 145.
Silver chlorate	$AgClO_3$	4.430	Schröder. J. 12, 12.
" "	"	4.439	Topsoë. B. S. C. 19, 246.
Thallium chlorate	$TlClO_3$	5.5047, 9°	Muir. C. N. 33, 156
Strontium chlorate	$SrCl_2O_6$	3.150	Schröder. Dm. 1873
" "	"	3.154	Schröder. Dm. 1873
Barium chlorate	$BaCl_2O_6.H_2O$	2.988, 15°	Bödeker. B. D. Z.
" "	"	3.214	Schröder. Dm. 1873.
" "	"	3.188	Schröder. Dm. 1873.
Lead chlorate	$PbCl_2O_6.H_2O$	4.018	" "
" "	"	4.030	" "
" "	"	4.063	" "

*Kammerer also gives figures for other hydrates of chloric acid.

Name.	Formula.	Sp. Gravity.	Authority.
Lead chlorate	$Pb\ Cl_2\ O_6.\ H_2\ O$	3.989	Topsoë. B. S. C. 19, 246.
Mercurous chlorate	$Hg\ Cl\ O_3$	6.409	Schröder. Dm. 1873.
Mercuric chlorate	$Hg\ Cl_2\ O_6$	4.998	" "
Basic mercuric chlorate	$Hg_2\ Cl_2\ O_7.\ H_2\ O$	5.151	Topsoë. B. S. C. 19, 246.
Hydrogen perchlorate, or perchloric acid.	$H\ Cl\ O_4$	1.782, 15°.5	Roscoe. J. 14, 146.
" "	$H\ Cl\ O_4.\ H_2\ O$	1.811, 50°	" "
Lithium perchlorate	$Li\ Cl\ O_4$	1.841	Wyrouboff. B. S. M. 6, 53.
Potassium perchlorate	$K\ Cl\ O_4$	2.528 }	Kopp. J. 16, 4.
" "	"	2.550 }	Kopp. J. 16, 4.
" "	"	2.520, m. of 6 }	Schröder. Dm. 1873.
" "	"	2.510 } Extremes }	Schröder. Dm. 1873.
" "	"	2.537 } Extremes }	Schröder. Dm. 1873.
Ammonium perchlorate	$Am\ Cl\ O_4$	1.885, 25°	Stephan. F. W. C.
Thallium perchlorate	$Tl\ Cl\ O_4$	4.844, 15°.5	Roscoe. C. N. 14, 217.

XIX. BROMATES.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium bromate	$Na\ Br\ O_3$	3.339, 17°.5	Kremers. J. 10, 67.
Potassium bromate	$K\ Br\ O_3$	3.271, 17°.5	" "
" "	"	3.218	Topsoë. B. S. C. 19, 246.
" "	"	3.323, 19°	Storer. F. W. C.
Silver bromate	$Ag\ Br\ O_3$	5.1983, 16° }	" "
" "	"	5.2153, 18° }	" "
Magnesium bromate	$Mg\ Br_2\ O_6.\ 6\ H_2\ O$	2.289	Topsoë. B. S. C. 19, 246.
Zinc bromate	$Zn\ Br_2\ O_6.\ 6\ H_2\ O$	2.566	Topsoë. C. C. 4, 76.
Cadmium bromate	$Cd\ Br_2\ O_6.\ 2\ H_2\ O$	3.758	Topsoë. B. S. C. 19, 246.
Basic mercuric bromate	$Hg_2\ Br_2\ O_7.\ H_2\ O$	5.815	Topsoë. C. C. 4, 76.
Calcium bromate	$Ca\ Br_2\ O_6.\ H_2\ O$	3.329	" "
Strontium bromate	$Sr\ Br_2\ O_6.\ H_2\ O$	3.773	" "
Barium bromate	$Ba\ Br_2\ O_6$	4.0395, 17° }	Storer. F. W. C.
" "	"	3.9918, 18° }	Storer. F. W. C.
" "	$Ba\ Br_2\ O_6.\ H_2\ O$	3.820	Topsoë. C. C. 4, 76.
Lead bromate	$Pb\ Br_2\ O_6.\ H_2\ O$	4.950	" "
Nickel bromate	$Ni\ Br_2\ O_6.\ 6\ H_2\ O$	2.575	" "
Copper bromate	$Cu\ Br_2\ O_6.\ 6\ H_2\ O$	2.583	" "

XX. IODATES AND PERIODATES.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen iodate,* or iodic acid.	$H\ I\ O_3$	4.869, 0°	Ditte. Ann. (4), 21, 22.
" "	"	4.816, 50°.8	
Sodium iodate	$Na\ I\ O_3$	4.277, 17°.5	Kremers. J. 10, 67.
Potassium iodate	$K\ I\ O_3$	3.979, 17°.5	" "
" "	"	2.601	Ditte. Ann. (4), 21, 48.
" "	"	3.802, 18°	Clarke.
Ammonium iodate	$Am\ I\ O_3$	3.3372, 12°.5	Fullerton. F. W. C.
" "	"	3.3085, 21°	
Silver iodate. Precip.	$Ag\ I\ O_3$	5.4023, 16°.5	" "
" " Cryst. from ammonia.	"	5.6475, 14°.5	
Magnesium iodate	$Mg\ I_2\ O_6.\ 4\ H_2\ O$	3.283, 13°.5	Bishop. F. W. C.
Barium iodate	$Ba\ I_2\ O_6$	5.2299, 18°	Fullerton. F. W. C.
Lead iodate	$Pb\ I_2\ O_6$	6.209	Schröder. Dm. 1873.
" "	"	6.248	
" "	"	6.257	
" "	"	6.155, 20°	Fullerton. F. W. C.
Nickel iodate	$Ni\ I_2\ O_6.\ 6\ H_2\ O$	3.6954, 22°	" "
Cobalt iodate	$Co\ I_2\ O_6.\ H_2\ O$	5.008, 18°	" "
" "	$Co\ I_2\ O_6.\ 6\ H_2\ O$	3.6659, 18°.5	" "
Didymium periodate	$Di\ I\ O_5.\ 4\ H_2\ O$	3.755, 21°.2	Cleve. U. N. A. 1885.
" "	"	3.761, 21°.2	
Samarium periodate	$Sm\ I\ O_5.\ 4\ H_2\ O$	3.793, 21°.2	" "

XXI. THIOSULPHATES,† SULPHITES, DITHIONATES.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium thiosulphate	$Na_2\ S_2\ O_3.\ 5\ H_2\ O$	1.672	Buignet. J. 14, 15.
" "	"	1.736, 10°	Kopp. J. 8, 45.
" "	"	1.734	Schiff. J. 12, 41.
" "	"	1.723	W. C. Smith. Am. J. P. 53, 148.
Potassium thiosulphate	$K_2\ S_2\ O_3$	2.590	Buignet. J. 14, 15.
Magnesium thiosulphate	$Mg\ S_2\ O_3.\ 6\ H_2\ O$	1.818, 24°	Oliver. F. W. C.
Calcium thiosulphate	$Ca\ S_2\ O_3.\ 6\ H_2\ O$	1.8715, 13°.5	Richardson. F. W. C.
" "	"	1.8728, 16°	
Strontium thiosulphate	$Sr\ S_2\ O_3.\ 6\ H_2\ O$	2.1778, 17°	" "
Barium thiosulphate	$Ba\ S_2\ O_3.\ H_2\ O$	3.4461, 16°	" "
" "	"	3.4486, 18°	
Cobalt thiosulphate	$Co\ S_2\ O_3.\ 6\ H_2\ O$	1.935, 25°	Oliver. F. W. C.
Hydrogen sulphite or sulphurous acid.	$H_2\ S\ O_3.\ 6\ H_2\ O$	1.147, 15°, cryst.	Geuther. A. C. P. 224, 218.

* For various hydrates of iodic acid see Kaemmerer, P. A. 138, 390.

† Commonly called hyposulphites.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium sulphite	$Na_2 S O_3 . 10 H_2 O$	1.561	Buignet. J. 14, 15.
Cuprous sulphite. Red	$Cu_2 S O_3 . H_2 O$	4.46	Etard. Ber. 15, 2233.
" " White	"	3.83, 15°	" "
Hydrogen dithionate, or dithionic acid.	$H_2 S_2 O_6 + aq.$	1.347	Gay Lussac. Gm. H. 2, 175.
Lithium dithionate	$Li_2 S_2 O_6 . 2 H_2 O$	2.158	Topsoë. C. C. 4, 76.
Sodium dithionate	$Na_2 S_2 O_6 . 2 H_2 O$	2.189	Topsoë. B. S. C. 19, 246.
" "	"	2.175, 11°	Baker. C. N. 36, 203.
Potassium dithionate	$K_2 S_2 O_6$	2.277	Topsoë. B. S. C. 19, 246.
Ammonium dithionate	$Am_2 S_2 O_6$	1.704	Topsoë. C. C. 4, 76.
Silver dithionate	$Ag_2 S_2 O_6 . 2 H_2 O$	3.605	" "
Magnesium dithionate	$Mg S_2 O_6 . 6 H_2 O$	1.666	Topsoë. B. S. C. 19, 246.
Zinc dithionate	$Zn S_2 O_6 . 6 H_2 O$	1.915	Topsoë. C. C. 4, 76.
Cadmium dithionate	$Cd S_2 O_6 . 6 H_2 O$	2.272	" "
Calcium dithionate	$Ca S_2 O_6 . 4 H_2 O$	2.180	Topsoë. B. S. C. 19, 246.
" "	"	2.176, 11°	Baker. C. N. 36, 203.
Strontium dithionate	$Sr S_2 O_6 . 4 H_2 O$	2.373	Topsoë. C. C. 4, 76.
Barium dithionate	$Ba S_2 O_6 . 2 H_2 O$	4.536, 13°.5	Baker. C. N. 36, 203.
" "	$Ba S_2 O_6 . 4 H_2 O$	3.142	Topsoë. C. C. 4, 76.
" "	"	3.055, 24°.5	Stephan. F. W. C.
Lead dithionate	$Pb S_2 O_6 . 4 H_2 O$	3.245	Topsoë. C. C. 4, 76.
" "	"	3.259, 11°	Baker. C. N. 36, 203.
Manganese dithionate	$Mn S_2 O_6 . 6 H_2 O$	1.757	Topsoë. C. C. 4, 76.
Iron dithionate	$Fe S_2 O_6 . 7 H_2 O$	1.875	" "
Nickel dithionate	$Ni S_2 O_6 . 6 H_2 O$	1.908	" "
Cobalt dithionate	$Co S_2 O_6 . 8 H_2 O$	1.815	" "

XXII. SULPHATES.

1st. Simple Sulphates.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen sulphate, or sulphuric acid.	$H_2 S O_4$	**1.857**	**Bineau. Ann. (3), 24, 337.**
" "	"	**1.8485**	**Ure. Schw. J. 35, 444.**
" "	"	**1.854, 0°**	**Marignac. J. 6, 325.**
" "	"	**1.842, 12°**	
" "	"	**1.834, 24°**	
" "	"	**1.857, 0°**	**Kolb. Z. A. C. 12, 333.**
" "	"	**1.85289, 0°**	**Marignac. Ann. (4), 22, 420.**
" "	"	**1.8354, 18°**	**Kohlrausch. P. A. 159, 243.**
" "	"	**1.82730, 28°**	**Nasini. Ber. 15, 2885.**

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen sulphate, or sulphuric acid.	H_2SO_4	1.854, 0°	Schertel. Ber. 15, 2784.
" "	"	1.8384, 15°	Lunge and Naef. Ber. 16, 953.
" "	"	1.83295, 19°.02	Mendelejeff. Ber. 17, ref. 804.
" "	"	1.8528, 0°	Mendelejeff. Ber. 19, 380.
" "	"	1.83904, 15°	Perkin. J. C. S. 49, 777.
" "	"	1.83562, 20°	
" "	"	1.83265, 25°	
" "	$H_2SO_4 . H_2O$	1.784, 8°	Wackenroder. J. 2, 249.
" "	"	1.7943, 0°	Mendelejeff. Ber. 19, 380.
" "	"	1.77806, 15°	Perkin. J. C. S. 49, 777.
" "	"	1.77423, 20°	
" "	"	1.77071, 25°	
" "	$H_2SO_4 . 2H_2O$	1.62	Watts' Dictionary.
" "	"	1.6655, 0°	Mendelejeff. Ber. 19, 380.
" "	"	1.65084, 15°	Perkin. J. C. S. 49, 777.
" "	"	1.64754, 20°	
" "	"	1.64467, 25°	
" "	$H_2SO_4 . 3H_2O$	1.55064, 15°	" "
" "	"	1.54754, 20°	
" "	"	1.54493, 25°	
Hydrogen pyrosulphate	$H_2S_2O_7$	1.9	Watts' Dictionary.
Hydrogen tetrasulphate	$H_2SO_4 + 3SO_3$	1.983	Weber. P. A. 159, 325.
Lithium sulphate	Li_2SO_4	2.210	Kremers. J. 10, 67.
" "	"	2.21, 15°	Brauner. P. M. (5), 11, 67.
" "	$Li_2SO_4 . H_2O$	2.02	Troost. J. 10, 141.
" "	"	2.052, 21°	Pettersson. U. N. A. 1874.
" "	"	2.056, 20°	
" "	"	2.066, 20°	
Sodium sulphate	Na_2SO_4	2.462	Mohs. Quoted by Schröder.
" "	"	2.67	Breithaupt. Quoted by Schröder.
" "	"	2.73	Cordier. Quoted by Schröder.
" "	"	2.640	Thomson. Ann. Phil. (2), 10, 435.
" "	"	2.6313	Karsten. Schw. J. 65, 394.
" "	"	2.597	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.629	Filhol. Ann. (3), 21, 415.
" "	"	2.654	Kremers. J. 5, 15. Crystallized at different temperatures.
" "	"	2.658	
" "	"	2.674	
" "	"	2.684	
" "	"	2.693, m. of 3.	Schröder. P. A. 106, 226.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium sulphate	Na_2SO_4	2.681, 20°.7	Favre and Valson. C. R. 77, 579.
" "	"	2.677, 17°	Pettersson. U. N. A. 1874.
" "	"	2.687, 17°	
" "	"	2.66180, cryst. at 40°.	Nicol. P. M. (5), 15, 94.
" "	"	2.66372, cryst. at 110°	
" "	"	2.104, at the melting p't.	Braun. J. C. S. (2), 13, 31.
" "	$Na_2SO_4.\ 10H_2O$	1.4457	Hassenfratz. Ann. 28, 3.
" "	"	1.350	Thomson. Ann. Phil. (2), 10, 435.
" "	"	1.469, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.520	Filhol. Ann. (3), 21, 415.
" "	"	1.465	Schiff.
" "	"	1.471	Buignet. J. 14, 15.
" "	"	1.4608	Stolba. J. P. C. 97, 503.
" "	"	1.4595	
" "	"	1.455, 26°.5	Favre and Valson. C. R. 77, 579.
" "	"	1.485, 19°	Pettersson. U. N. A. 1874.
" "	"	1.492, 20°	
Potassium sulphate	K_2SO_4	2.636	Wattson.
" "	"	2.4073	Hassenfratz. Ann. 28, 3.
" "	"	2.880	Thomson. Ann. Phil. (2), 10, 435.
" "	"	2.6232	Karsten. Schw. J. 65, 394.
" "	"	2.400	Jacquelain. A. C. P. 32, 234.
" "	"	2.662	Kopp. A. C. P. 36, 1.
" "	"	2.640	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.65606, 4°	Playfair and Joule. J. C. S. 1, 182.
" "	"	2.625	Filhol. Ann. (3), 21, 415.
" " Cryst.	"	2.644	Penny. J. 8, 333.
" " After fusion.	"	2.657	
" "	"	2.676	Holker. P. M. (3), 27, 213.
" "	"	2.653	Schiff. A. C. P. 107, 64.
" "	"	2.658	Schröder. P. A. 106, 226.
" "	"	2.572	Buignet. J. 14, 15.
" "	"	2.645	Stolba. J. P. C. 97, 503.
" "	"	2.648	Topsoë and Christiansen.

Name.	Formula.	Sp. Gravity.	Authority.
Potassium sulphate	K_2SO_4	2.660, 17°.1	Pettersson. U. N. A. 1874.
" "	"	2.667, 18°.2	
" "	"	2.669, 18°.2	
" "	"	2.635, 18°.5	Richardson. F. W. C.
" "	"	2.653, 14°	Wise. F. W. C.
" "	"	2.715	W. C. Smith. Am. J. P. 45, 148.
" "	"	2.1, fused	Quincke. P. A. 138, 141.
" "	"	2.6651, 0°	Spring. Ber. 15, 1940. Details in Bull. Acad. Belgique IV., No. 8, 1882.
" "	"	2.6627, 10°	
" "	"	2.6603, 20°	
" "	"	2.6577, 30°	
" "	"	2.6551, 40°	
" "	"	2.6522, 50°	
" "	"	2.6492, 60°	
" "	"	2.6456, 70°	
" "	"	2.6420, 80°	
" "	"	2.6366, 90°	
" "	"	2.6311, 100°	
" Not pressed	"	2.653, 21°	Spring. Ber. 16, 2724.
" Once "	"	2.651, 22°	
" Twice "	"	2.656, 22°	
Potassium pyrosulphate	$K_2S_2O_7$	2.277	Jacquelain. A. C. P. 32, 234.
Rubidium sulphate	Rb_2SO_4	3.639, 16°.8	Pettersson. U. N. A. 1874.
" "	"	3.641, 16°.8	
" "	"	3.6438, 0°	Spring. Ber. 15, 1940. Details in Bull. Acad. Belgique IV., No. 8, 1882.
" "	"	3.6402, 10°	
" "	"	3.6367, 20°	
" "	"	3.6333, 30°	
" "	"	3.6299, 40°	
" "	"	3.6256, 50°	
" "	"	3.6220, 60°	
" "	"	3.6181, 70°	
" "	"	3.6142, 80°	
" "	"	3.6089, 90°	
" "	"	3.6036, 100°	
Cæsium sulphate	Cs_2SO_4	4.105, 19°.2	Pettersson. U. N. A. 1874.
Ammonium sulphate	Am_2SO_4	1.7676	Hassenfratz. Ann. 28, 3.
" "	"	1.76	Kopp. J. 11, 10.
" "	"	1.78	
" "	"	1.750	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.76147, 4°	Playfair and Joule. J. C. S. 1, 138.
" "	"	1.628	Schiff. A. C. P. 107, 64.
" "	"	1.771, m. of 2	Schröder. P. A. 106, 226.
" "	"	1.750	Buignet. J. 14, 15.
" "	"	1.770, m. of 4	Pettersson. U. N. A. 1874.
" "	"	1.766 extremes 17°.9-18°.6	
" "	"	1.775	
" "	"	1.7	W. C. Smith. Am. J. P. 53, 145.

Name.	Formula.	Sp. Gravity.	Authority.
Ammonium sulphate	Am_2SO_4	1.765, 20°.5	Wilson. F. W. C
" "	"	1.773	Schröder. Ber. 11, 2211.
" "	"	1.7763, 0°	Spring. Ber. 15, 1940. Details in Bull. Acad. Belgique. IV., No. 8, 1882.
" "	"	1.7748, 10°	
" "	"	1.7734, 20°	
" "	"	1.7719, 30°	
" "	"	1.7703, 40°	
" "	"	1.7685, 50°	
" "	"	1.7667, 60°	
" "	"	1.7641, 70°	
" "	"	1.7617, 80°	
" "	"	1.7593, 90°	
" "	"	1.7567, 100°	
" Not pressed	"	1.773, 20°	Spring. Ber. 16, 2724.
" Once "	"	1.750, 22°	
" Twice "	"	1.760, 22°	
Mascagnite	$Am_2SO_4 . H_2O$	1.72—1.73	Dana's Mineralogy.
Silver sulphate	Ag_2SO_4	5.341	Karsten. Schw. J. 65, 394.
" "	"	5.322	Playfair and Joule. M. C. S. 2, 401.
" "	"	5.410	Filhol. Ann. (3), 21, 415.
" "	"	5.425	Schröder. P. A. 106, 226.
" "	"	5.49 } 11°	Pettersson. U. N. A. 1874.
" "	"	5.54 } 11°	
Thallium sulphate	Tl_2SO_4	6.77	Lamy. J. 15, 186.
" "	"	6.603	Lamy and Des Cloizeaux. Nature 1, 116.
" "	"	6.79, 17°.8	Pettersson. U. N. A. 1874.
" "	"	6.81, 17°.2	
" "	"	6.83, 17°	
Glucinum sulphate	$GlSO_4$	2.443	Nilson and Pettersson. C. R. 91, 232.
" "	$GlSO_4 . 4H_2O$	1.725	Topsoë. C. C. 4, 76.
" "	"	1.6743, 22°	H. Stallo. F. W. C.
" "	"	1.713	Nilson and Pettersson. C. R. 91, 232.
Magnesium sulphate	$MgSO_4$	2.6066	Karsten. Schw. J. 65, 394.
" "	"	2.706, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.628	Filhol. Ann. (3), 21, 415.
" "	"	2.675, 16°	Pape. P. A. 120, 367.
" "	"	2.770, 13°.8	Pettersson. U. N. A. 1876.
" "	"	2.795, 14°	
" "	"	2.488	Schröder. J. P. C. (2), 19, 266. Two modifications.
" "	"	2.471	
" "	"	2.829	
" "	"	2.709, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$MgSO_4 . H_2O$	2.517, native	Bischof. Dana's Min.

Name.	Formula.	Sp. Gravity.	Authority.
Magnesium sulphate	$Mg\,S\,O_4.\ H_2\,O$	2.281, 16°	Pape. P. A. 120, 369.
" "	"	2.339, 14°	Pettersson. U. N. A. 1876.
" "	"	2.340, 16°.5	
" "	"	2.385	Schröder. J. P. C. (2), 19, 266.
" "	"	2.478, m. of 2	Playfair. J. C. S. 37, 102.
" "	"	2.445, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Mg\,S\,O_4.\ 2\,H_2\,O$	2.279	Playfair. J. C. S. 37, 102.
" "	"	2.373, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Mg\,S\,O_4.\ 5\,H_2\,O$	1.869, m. of 2	Playfair. J. C. S. 37, 102.
" "	$Mg\,S\,O_4.\ 6\,H_2\,O$	1.751	" "
" "	"	1.734, 15°	Thorpe and Watts. J. C. S. 37, 102.
" Two modi-	"	1.6151	Schulze. P. A. (2), 31, 229.
" fications.	"	1.8981	
" "	$Mg\,S\,O_4.\ 7\,H_2\,O$	1.6603	Hassenfratz. Ann. 28, 3.
" "	"	1.751	Mohs. See Böttger.
" "	"	1.674	Kopp. A. C. P. 36, 1.
" "	"	1.660	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.6829, 4°	Playfair and Joule. J. C. S. 1, 138.
" "	"	1.751	Filhol. Ann. (3), 21, 415.
" "	"	1.685	Schiff. A. C. P. 107, 64.
" "	"	1.675	Buignet. J. 14, 15.
" "	"	1.636, 15°.5	Forbes. P. M. 32, 135.
" "	"	1.665, 15°.5	Holker. P. M. (3), 27, 213.
" "	"	1.701, 16°	Pape. P. A. 120, 373.
" "	"	1.684, 15°.4	Pettersson. U. N. A. 1876.
" "	"	1.691, 15°.5	
" "	"	1.680	Schröder. Dm. 1873.
" "	"	1.675	Schröder. J. P. C. (2), 19, 266.
" "	"	1.682	W. C. Smith. Am. J. P. 53, 148.
" "	"	1.678, 15°	Thorpe and Watts. J. C. S. 37, 102.
Zinc sulphate	$Zn\,S\,O_4$	3.681, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.400	Karsten. Schw. J. 65, 394.
" "	"	3.400	Filhol. Ann. (3), 21, 415.
" "	"	3.435, 16°	Pape. P. A. 120, 367.

Name.	Formula.	Sp. Gravity.	Authority.
Zinc sulphate	$Zn\ S\ O_4$	3.520	Schröder. J. P. C. (2), 19, 266.
" "	"	3.552	
" "	"	3.580	
" "	"	3.6235, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Zn\ S\ O_4 .\ H_2\ O$	3.215, 16°	Pape. P. A. 120, 369.
" "	"	3.076	Schröder. J. P. C. (2), 19, 266.
" "	"	3.259	Playfair. J. C. S. 37, 102.
" "	"	3.2845, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Zn\ S\ O_4 .\ 2\ H_2\ O$	2.958, 15°	" "
" "	$Zn\ S\ O_4 .\ 5\ H_2\ O$	2.206, 15°	" "
" "	$Zn\ S\ O_4 .\ 6\ H_2\ O$	2.056	Playfair. J. C. S. 37, 102.
" "	"	2.072, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Zn\ S\ O_4 .\ 7\ H_2\ O$	1.912	Hassenfratz. Ann. 28, 3.
" "	"	2.036	Mohs. See Böttger.
" "	"	1.931, m. of 4	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.036	Filhol. Ann. (3), 21, 415.
" "	"	1.953	Schiff. A. C. P. 107, 64.
" "	"	1.957	Buignet. J. 14, 15.
" "	"	1.9534	Stolba. J. P. C. 97, 503.
" "	"	1.976, 15°.5	Holker. P. M. (3), 27, 218.
" "	"	1.901, 16°	Pape. P. A. 120, 374.
" "	"	2.015	Schröder. Dm. 1873.
" "	"	1.958	Schröder. J. P. C. (2), 19, 266.
" "	"	1.955	
" "	"	1.961	W. C. Smith. Am. J. P. 53, 148.
" "	"	1.974, 15°	Thorpe and Watts. J. C. S. 37, 102.
Cadmium sulphate	$Cd\ S\ O_4$	4.447	Schroder. J. P. C. (2), 19, 266.
" "	$Cd\ S\ O_4 .\ H_2\ O$	2.939	Buignet. J. 14, 15.
" "	$3\ Cd\ S\ O_4 .\ 8\ H_2\ O$	3.05, 12°	Giesecke. B. D. Z.
Mercurous sulphate	$Hg_2\ S\ O_4$	7.560	Playfair and Joule. M. C. S. 2, 401.
Mercuric sulphate	$Hg\ S\ O_4$	6.466	" "
Calcium sulphate	$Ca\ S\ O_4$	2.9271	Karsten. Schw. J. 65, 394.
" "	"	2.955	Neumann. P. A. 23, 1.
" "	"	3.102	Filhol. Ann. (3), 21, 415.
" " Artificial cryst.	"	2.969	Manross. J. 5, 9.
" " Anhydrite	"	2.983	Schrauf. J. 15, 756.

Name.	Formula.	Sp. Gravity.	Authority.
Calcium sulphate. Anhydrite.	$Ca\,S\,O_4$	2.92, 15°	Fuchs. J. 15, 755.
" "	"	2.736	Two lots. Schröder. Dm. 1873.
" "	"	2.759	Two lots. Schröder. Dm. 1873.
" "	"	2.884	Two lots. Schröder. Dm. 1873.
" " Artificial cryst.	"	2.98	Gorgeu. Ann. (6), 4, 515.
" "	$2\,Ca\,S\,O_4.\ H_2\,O$	2.757	Johnston. P. M. (2), 13, 325.
" "	$Ca\,S\,O_4.\ 2\,H_2\,O$	2.322	Leroyer and Dumas.
" "	"	2.310	Mohs.
" "	"	2.307	Breithaupt. Schw. J. 68, 291.
" "	"	2.331	Filhol. Ann. (3), 21, 415.
" " Gypsum	"	2.317, m. of 15	Kenngott. J. 6, 844.
" "	"	2.3057	Stolba. J. P. C. 97, 503.
" " Powder	"	2.2745, 19°.4	Pettersson. U. N. A. 1874.
" " "	"	2.3228, 18°.2	Pettersson. U. N. A. 1874.
" " Splinters	"	2.3086, 18°	Pettersson. U. N. A. 1874.
" " "	"	2.3223, 18°	Pettersson. U. N. A. 1874.
Strontium sulphate. Celestite.	$Sr\,S\,O_4$	3.973	Breithaupt. Dana's Min.
" " "	"	3.9593	Beudant. Dana's Min.
" " "	"	3.96	Hunt. Dana's Min.
" " "	"	3.86	Mohs.
" " "	"	3.962, 15°	Kopp.
" " "	"	3.955	Neumann. P. A. 23, 1.
" " Artificial cryst.	"	3.927	Manross. J. 5, 9.
" "	"	3.949	Schröder. P. A. Erganz. Bd. 6, 622.
" " Ppt.	"	3.5883	Karsten. Schw. J. 65, 394.
" " "	"	3.770	Filhol. Ann. (3), 21, 415.
" " "	"	3.707	Schröder. P. A. 106, 226.
" " Ppt. ignited.	"	3.6679, 18°	Schweitzer. Proc. Amer. Asso. 1877, 201.
" " Ppt. ignited.	"	3.6949, 18°	Schweitzer. Proc. Amer. Asso. 1877, 201.
" " unignited.	"	3.7383, 18°	Schweitzer. Proc. Amer. Asso. 1877, 201.
" " "	"	3.9502, 18°	Schweitzer. Proc. Amer. Asso. 1877, 201.
" " "	"	3.9514, 18°	Schweitzer. Proc. Amer. Asso. 1877, 201.
" " "	"	3.9702, 18°	Schweitzer. Proc. Amer. Asso. 1877, 201.
" " Artif. cryst	"	3.9	Gorgeu. Ann. (6), 4, 515.
Barium sulphate	$Ba\,S\,O_4$	4.42	Breithaupt.
" "	"	4.446	Mohs. See Böttger.
" "	"	4.2003	Karsten. Schw. J. 65, 394.
" "	"	4.4695, 0°	Kopp.
" " Barite	"	4.429	Neumann. P. A. 23, 1.
" " "	"	4.4773, extremes of 7.	G. Rose. P. A. 75, 409.
" " "	"	4.4872, extremes of 7.	G. Rose. P. A. 75, 409.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Barium sulphate. Barite	$Ba\,S\,O_4$	4.4794	G. Rose. P. A. 75, 409.
" " powder.	"	4.4804	
" " Precip.	"	4.5271	
" " "	"	4.5253	
" " Artif. cryst.	"	4.179	Manross. J. 5, 9.
" "	"	4.022	Precipitates in different conditions. Schröder. P. A. 106, 226.
" "	"	4.065	
" "	"	4.512	
" " Ppt. ignited.	"	4.2942 18°	Schweitzer. University of Missouri. Special pub., 1876.
" " Ppt. dried at 95°.	"	4.2688 18°	
" " Ppt.	"	4.4591 18°	
" " "	"	4.4881 18°	
" " "	"	4.3958 14°.9	E. Wiedemann. P. M. (5), 15, 371.
" " "	"	4.3969 14°.9	
" " "	"	4.3962 14°.5	
" " "	"	4.3967 14°.5	
" " Artif. cryst.	"	4.44—4.50	Gorgeu. Ann. (6), 4, 515.
Lead sulphate	$Pb\,S\,O_4$	6.298	Mohs.
" "	"	6.1691	Karsten. Schw. J. 65, 394.
" "	"	6.30	Filhol. Ann. (3), 21, 415.
" "	"	6.35	Smith. J. 8, 969.
" "	"	6.20	Field. J. 14, 1022.
" " Native	"	6.329	Schröder. P. A. Erganz. Bd. 6, 622.
" " Precip.	"	6.212	
" "	"	5.96, 17°.1	Pettersson. U. N. A. 1874.
" "	"	5.97, 16°.8	
" " Artif. cryst.	"	6.16	Gorgeu. Ann. (6), 4, 515.
Manganese sulphate	$Mn\,S\,O_4$	3.1, 14°	Bödeker. B. D. Z.
" "	"	3.192, 16°	Pape. P. A. 120, 368.
" "	"	2.954	Schröder. Dm. 1873.
" "	"	2.975	Schröder. J. P. C. (2), 19, 266.
" "	"	3.235, 14°.6	Pettersson. U. N. A. 1876.
" "	"	3.260, 14°	
" "	"	3.386	Playfair. J. C. S. 37, 102.
" "	"	3.282, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Mn\,S\,O_4.\,H_2\,O$	2.870, 14°.2	Pettersson. U. N. A. 1876.
" "	"	2.903, 15°.4	
" "	"	2.905, 14°.9	
" "	"	3.210	Playfair. J. C. S. 37, 102.
" "	"	2.845, 15°	Thorpe and Watts. J. C. S. 37, 102.
" " Szmikite	"	3.15	Schröckinger. J. 30, 1296.
" "	$Mn\,S\,O_4.\,2\,H_2\,O$	2.526, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Mn\,S\,O_4.\,3\,H_2\,O$	2.356, 15°	" "
" "	$Mn\,S\,O_4.\,4\,H_2\,O$	2.261	Topsoë. C. C. 4, 76

Name.	Formula.	Sp. Gravity.	Authority.
Manganese sulphate	$Mn\,S\,O_4.\ 5\,H_2\,O$	1.834	Gmelin.
" "	"	2.087	Kopp. A. C. P. 36, 1.
" "	"	2.095	
" "	"	2.059, 16°	Pape. P. A. 120, 372.
" "	"	2.099, 16°.2	Petterssen. U. N. A. 1876.
" "	"	2.103, 17°.6	
" "	"	2.107, 15°.2	
" "	"	2.103, 15°	Thorpe and Watts. J. C. S. 37, 102.
Ferrous sulphate	$Fe\,S\,O_4$	2.841	Filhol. Ann. (3), 21, 415.
" "	"	3.138	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.48	Playfair. J. C. S. 37, 102.
" "	"	3.346, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Fe\,S\,O_4.\ H_2\,O$	3.047	Playfair. J. C. S. 37, 102.
" "	"	2.994, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Fe\,S\,O_4.\ 2\,H_2\,O$	2.773, 15°	" "
" "	$Fe\,S\,O_4.\ 3\,H_2\,O$	2.268, 16°	Pape. P. A. 120, 371.
" "	$Fe\,S\,O_4.\ 4\,H_2\,O$	2.227, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Fe\,S\,O_4.\ 7\,H_2\,O$	1.8399	Hassenfratz. Ann. 28, 3.
" "	"	1.857, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.8889, 4°	Playfair and Joule. J. C. S. 1, 138.
" "	"	1.904	Filhol. Ann. (3), 21, 415.
" "	"	1.884	Schiff. A. C. P. 107, 64.
" "	"	1.902	Buignet. J. 14, 15.
" "	"	1.851, 15°.5	Holker. P. M. (3), 27, 214.
" "	"	1.9854, 16°	Pape. P. A. 120, 372.
" "	"	1.881	Schröder. Dm. 1873
" "	"	1.897	Schröder. J. P. C. (2), 19, 266.
" "	"	1.896	W. C. Smith. Am. J. P. 53, 145.
Ferric sulphate	$Fe_2\,(S\,O_4)_3$	3.097, 18°	Pettersson. U. N. A. 1874.
" "	"	3.098, 18°.5	
" "	"	3.103, 18°.2	
Coquimbite	$Fe_2\,(S\,O_4)_3.\ 9\,H_2\,O$	2.0—2.1	Dana's Mineralogy.
"	"	2.092	Breithaupt. See Z. K. M. 3, 520.
Ihleite	$Fe_2\,(S\,O_4)_3.\ 12\,H_2\,O$	1.812	Schrauf. N. J. 1877, 252.
Nickel sulphate	$Ni\,S\,O_4$	3.643, 16°	Pape. P. A. 120, 369.
" "	"	3.652	Schröder. J. P. C. (2), 19, 266.
" "	"	3.696	

Name.	Formula.	Sp. Gravity.	Authority.
Nickel sulphate	$Ni\,S\,O_4$	3.526	Playfair. J. C. S. 37, 102.
" "	"	3.418, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Ni\,S\,O_4.\ 6\,H_2\,O$	2.042	Topsoë. C. C. 4, 76.
" "	"	2.074	
" "	"	2.031, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Ni\,S\,O_4.\ 7\,H_2\,O$	2.037	Kopp. A. C. P. 36, 1.
" "	"	1.931	Schiff. A. C. P. 107, 64.
" " Morenosite	"	2.004	Fulda. J. 17, 859.
" "	"	1.877, 16°	Pape. P. A. 120, 373.
" "	"	1.955, 14°	Pettersson. U. N. A. 1876.
" "	"	1.949, 15°	Thorpe and Watts. J. C. S. 37, 102.
Cobalt sulphate	$Co\,S\,O_4$	3.531	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.614, 15°.6	Pettersson. U. N. A. 1876.
" "	"	3.615, 16°	
" "	"	3.444	Playfair. J. C. S. 37, 102.
" "	"	3.472, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Co\,S\,O_4.\ H_2\,O$	3.125, 15°	" "
" "	$Co\,S\,O_4.\ 2\,H_2\,O$	2.712	Playfair. J. C. S. 37, 102.
" "	"	2.668, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Co\,S\,O_4.\ 4\,H_2\,O$	2.327, 15°	" "
" "	$Co\,S\,O_4.\ 5\,H_2\,O$	2.134, 15°	" "
" "	$Co\,S\,O_4.\ 6\,H_2\,O$	2.019, 15°	" "
" "	$Co\,S\,O_4.\ 7\,H_2\,O$	1.924	Schiff. A. C. P. 107, 64.
" "	"	1.958, 15°.6	Pettersson. U. N. A. 1876.
" "	"	1.964, 15°.5	
" "	"	1.958	Schröder. J. P. C. (2), 19, 266.
" "	"	1.918, 15°	Thorpe and Watts. J. C. S. 37, 102.
Copper sulphate	$Cu\,S\,O_4$	3.631	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.572	Karsten. Schw. J. 65, 394.
" "	"	3.530	Filhol. Ann. (3), 21, 415.
" "	"	3.527, 16°	Pape. P. A. 120, 368.
" "	"	3.707, 19°	Favre and Valson. C. R. 77, 579.
" "	"	3.82, 17°.1	Pettersson. U. N. A. 1874.
" "	"	3.83, 18°	
" "	"	3.651, 11°	Hampe. Z. C. 13, 367.
" "	"	3.88	Schröder. J. P. C. (2), 19, 266.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Copper sulphate	$Cu\ S\ O_4$	3.606, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Cu\ S\ O_4.\ H_2\ O$	3.125, 16°	Pape. P. A. 120, 370.
" "	"	3.235, 17°.2	Pettersson. U. N. A. 1874.
" "	"	3.239, 18°.1	
" "	"	3.246, 18°	
" "	"	3.038	Schröder. J. P. C. (2), 19, 266.
" "	"	3.296	Playfair. J. C. S. 37, 102.
" "	"	3.289, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Cu\ S\ O_4.\ 2\ H_2\ O$	2.808, 16°	Pape. P. A. 120, 371.
" "	"	2.878	Playfair. J. C. S. 37, 102.
" "	"	2.891	
" "	"	2.953, 15°	Thorpe and Watts. J. C. S. 37, 102.
" "	$Cu\ S\ O_4.\ 3\ H_2\ O$	2.663, 15°	" "
" "	$2\ Cu\ S\ O_4.\ 7\ H_2\ O$	2.648, 15°	" "
" "	$Cu\ S\ O_4.\ 5\ H_2\ O$	2.1943	Hassenfratz. Ann. 28, 3.
" "	"	2.2	Gmelin.
" " Native	"	2.297	Breithaupt. J. P. C. 11, 151.
" "	"	2.274	Kopp. A. C. P. 36, 1.
" "	"	2.254	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.286	Filhol. Ann. (3), 21, 415.
" "	"	2.2422, 4°	Playfair and Joule. J. C. S. 1, 138.
" "	"	2.2781, 4°	
" "	"	2.2901, 4°	
" "	"	2.302	Buignet. J. 14, 15.
" "	"	2.2778	Stolba. J. P. C. 97, 503.
" "	"	2.268, 16°	Pape. P. A. 120, 371.
" "	"	2.248, 18°.9	Favre and Valson. C. R. 77, 579.
" "	"	2.286, 19°.4	Pettersson. U. N. A. 1874.
" "	"	2.292, 20°	
" "	"	2.277	Schröder. Dm. 1873.
" "	"	2.263	Schröder. J. P. C. (2), 19, 266.
" "	"	2.296	
" "	"	2.330	Rüdorff. Ber. 12, 251.
" "	"	2.212	W. C. Smith. Am. J. P. 53, 145.
" "	"	2.284, 15°	Thorpe and Watts. J. C. S. 37, 102.
Chromic sulphate	$Cr_2\ (S\ O_4)_3$	2.743, 17°.2	Favre and Valson. C. R. 77, 579.
" "	"	3.012	Nilson and Pettersson. C. R. 91, 232.
" "	$Cr_2\ (S\ O_4)_3.\ 15\ H_2\ O$	1.696, 22°	Schrötter. P. A. 53, 513.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chromic sulphate	$Cr_2(SO_4)_3 \cdot 15H_2O$	1.867, 17°.2	Favre and Valson. C. R. 77, 579.
Aluminum sulphate	$Al_2(SO_4)_3$	2.7400	Karsten. Schw. J. 65, 394.
" "	"	2.171	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.672, 22°.5	Favre and Valson. C. R. 77, 579.
" "	"	2.710 } 17°	Pettersson. U. N. A. 1874.
" "	"	2.716 } 17°	
" "	$Al_2(SO_4)_3 \cdot 18H_2O$	1.671, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.569	Filhol. Ann. (3), 21, 415.
" "	"	1.767, 22°.1	Favre and Valson. C. R. 77, 579.
Indium sulphate	$In_2(SO_4)_3$	3.438	Nilson and Pettersson. C. R. 91, 232.
Scandium sulphate	$Sc_2(SO_4)_3$	2.579	" "
Yttrium sulphate	$Y_2(SO_4)_3$	2.606, 19°.4	Pettersson. U. N. A. 1876.
" "	"	2.615, 15°	
" "	"	2.626, 19°.3	
" "	"	2.612	Nilson and Pettersson. C. R. 91, 232.
" "	$Y_2(SO_4)_3 \cdot 8H_2O$	2.52	Cleve and Hoeglund. B. S. C. 18, 200.
" "	"	2.53	Topsoë. Quoted by Pettersson.
" "	"	2.531, 19°.6	Pettersson. U. N. A. 1876.
" "	"	2.537, 19°.4	
" "	"	2.552, 15°	
" "	"	2.540	Nilson and Pettersson. C. R. 91, 232.
Erbium sulphate	$Er_2(SO_4)_3$	3.518, 14°.5	Pettersson. U. N. A. 1876.
" "	"	3.524, 14°.2	
" "	"	3.678	Nilson and Pettersson. C. R. 91, 232.
" "	$Er_2(SO_4)_3 \cdot 8H_2O$	3.17	Cleve and Hoeglund. B. S. C. 18, 200.
" "	"	3.230, 16°.4	Pettersson. U. N. A. 1876.
" "	"	3.242, 16°.6	
" "	"	3.248, 17°.1	
" "	"	3.180	Nilson and Pettersson. C. R. 91, 232.
Ytterbium sulphate	$Yb_2(SO_4)_3$	3.793	" "
" "	$Yb_2(SO_4)_3 \cdot 8H_2O$	3.286	" "
Lanthanum sulphate	$La_2(SO_4)_3$	3.53, 13°.6	Pettersson. U. N. A. 1876.
" "	"	3.67, 15°.4	
" "	"	3.600	Nilson and Pettersson. C. R. 91, 232.
" "	"	3.544 } 15°	Brauner. S. W. A. June, 1882.
" "	"	3.545 } 15°	
" "	$La_2(SO_4)_3 \cdot 9H_2O$	2.827	Topsoë. Quoted by Pettersson.
" "	"	2.848, 17°.2	Pettersson. U. N. A. 1876.
" "	"	2.864, 17°.4	
" "	"	2.853	Nilson and Pettersson. C. R. 91, 232.

Name.	Formula.	Sp. Gravity.	Authority.
Cerium sulphate	$Ce_2 (SO_4)_3$	3.916, 12°.5	Pettersson. U. N. A. 1876.
" "	"	3.912	Nilson and Pettersson. C. R. 91, 232.
" "	$Ce_2 (SO_4)_3 . 5 H_2O$	3.214, 14°.2	Pettersson. U. N. A. 1876.
" "	"	3.232, 14°	
" "	"	3.220	Nilson and Pettersson. C. R. 91, 232.
Didymium sulphate	$Di_2 (SO_4)_3$	3.722, 14°.6	Pettersson. U. N. A. 1876.
" "	"	3.756, 15°.6	
" "	"	3.735	Nilson and Pettersson. C. R. 91, 232.
" "	"	3.662 } 18°.3	Cleve. U. N. A. 1885.
" "	"	3.672 } 18°.3	
" "	$Di_2 (SO_4)_3 . 8 H_2O$	2.82	Cleve and Hoeglund. B. S. C. 18, 200.
" "	"	2.877, 16°.4	Pettersson. U. N. A. 1876.
" "	"	2.886, 14°.8	
" "	"	2.878	Nilson and Pettersson. C. R. 91, 262.
" "	"	2.827, 14°.8	Cleve. U. N. A. 1885.
" "	"	2.828, 16°.2	
" "	"	2.831, 16°	
Samarium sulphate	$Sm_2 (SO_4)_3$	3.898, 18°3	" "
" "	$Sm_2 (SO_4)_3 . 8 H_2O$	2.928 } 18°.3	" "
" "	"	2.932 } 18°.3	
Thorium sulphate	$Th (SO_4)_2$	4.053, 22°.8	Clarke. A. C. J. 2, 175.
" "	"	4.2252, 17°	Krüss and Nilson. Ber. 20, 1675.
" "	$2 Th (SO_4)_2 . 9 H_2O$	3.398, 24°	Clarke. A. C. J. 2, 175.
" "	$Th (SO_4)_2 . 9 H_2O$	2.767	Topsoë. B. S. C. 21, 120.
Uranyl sulphate	$UO_2 . SO_4 . 3 H_2O$	3.280, 16°.5	H. Schmidt. F. W. C.

2d. Double and Triple Sulphates.*

Name.	Formula.	Sp. Gravity.	Authority.
Sodium hydrogen sulphate	$NaHSO_4$	2.742	Playfair and Joule. M. C. S. 2, 401.
Potassium hydrogen sulphate.	$KHSO_4$	2.112	Thomson. Ann. Phil. (2), 10, 435.
" " "	"	2.163	Jacquelain. A. C. P. 32, 234.
" " "	"	2.475, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.47767, 4°	Playfair and Joule. J. C. S. 1, 138.

* Exclusive of basic or partly basic double sulphates.

Name.	Formula.	Sp. Gravity.	Authority.
Potassium hydrogen sulphate.	$KHSO_4$	2.305, cryst.	Schröder. Dm. 1873.
" " "	"	2.354 } cryst. mass.	
" " "	"	2.355 } cryst. mass.	
" " "	"	2.091, after fusion.	
" " "	"	2.245, cryst.	Wyrouboff. B. S. M. 7, 7.
Ammonium hydrogen sulphate.	$Am\,HSO_4$	1.761, m. of 2.	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.787	Schiff. A. C. P. 107, 64.
Sodium potassium sulphate.	$Na_2SO_4.\ 3K_2SO_4$	2.668	Two lots. Penny. J. 8, 333.
" " "	"	2.671	
Lithium ammonium sulphate.	$Am\,LiSO_4$	1.164 } two modifications	Wyrouboff. B. S. M. 5, 42.
" " "	"	1.204 } two modifications	
Sodium ammonium sulphate.	$Am\,NaSO_4.\ 2H_2O$	1.63	Schiff. A. C. P. 114, 68.
Potassium ammonium sulphate.	$Am\,KSO_4$	2.280	Schiff. A. C. P. 107, 64.
Guanovulite	$Am_2K_7H_3(SO_4)_6.\ 4H_2O.$	2.33	Wibel. Ber. 7, 393.
"		2.65	
Glauberite	$Na_2Ca(SO_4)_2$	2.767	Breithaupt. Schw. J. 68, 291.
"	"	2.64	Ulex. J. 2, 776.
Syngenite	$K_2Ca(SO_4)_2.\ H_2O$	2.603, 17°.5	Zepharovich. J. 25, 1143.
"	"	2.252	Rumpf. Dana's Min., 2d Supp.
Dreelite	$CaSO_4.\ 3BaSO_4$	3.2—3.4	Dana's Mineralogy.
Polyhalite	$K_2Ca_2Mg(SO_4)_4.\ 2H_2O.$	2.7689	" "
Krugite	$K_2Ca_4Mg(SO_4)_6.\ 2H_2O.$	2.801	Precht. Ber. 14, 2138.
Simonyite	$Na_2Mg(SO_4)_2.\ 4H_2O.$	2.244	Tschermak. J. 22, 1241.
Loewite	$Na_4Mg_2(SO_4)_4.\ 5H_2O.$	2.376	Haidinger. J. 1, 1220.
Krönnkite	$Na_2Cu(SO_4)_2.\ 2H_2O.$	2.5	Domeyko. Dana's Min., 3d Supp.
Potassium magnesium sulphate.	$K_2Mg(SO_4)_2$	2.676	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.735	Schröder. Ber. 7, 1117.
" " "	"	2.750	
" " "	$K_2Mg(SO_4)_2.\ 6H_2O.$	2.076, m. of 2.	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.05319, 4°	Playfair and Joule. J. C. S. 1, 138.
" " "	"	1.995	Schiff. A. C. P. 107, 64.
" " "	"	2.024	Topsoë and Christiansen.
" " "	"	2.034	Schröder. Dm. 1873.
" " "	"	2.036	Schröder. J. P. C. (2), 19, 266.
" " "	"	2.048	
Ammonium magnesium sulphate.	$Am_2Mg(SO_4)_2$	2.080	" "

Name.	Formula.	Sp. Gravity.	Authority.
Ammonium magnesium sulphate.	$Am_2 Mg (S O_4)_2$	2.095	Schröder. J. P. C. (2), 19, 266.
" "	"	2.141	
" "	$Am_2 Mg (S O_4)_2 . 6 H_2 O$	1.696	Gmelin.
" "	"	1.721	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.71686, 4°	Playfair and Joule. J. C. S. 1, 138.
" "	"	1.680	Schiff. A. C. P. 107, 64.
" "	"	1.762	Buignet. J. 14. 15.
" "	"	1.720	Topsoë and Christiansen.
" "	"	1.723	Schröder. J. P. C. (2), 19, 266.
" "	"	1.727	
Potassium zinc sulphate	$K_2 Zn (S O_4)_2$	2.816	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.946	Various lots, differently treated. Schröder. J. P. C. (2), 19, 266.
" " "	"	2.891	
" " "	"	3.027	
" " "	"	2.703	
" " "	"	2.733	
" " "	$K_2 Zn (S O_4)_2 . 6 H_2 O$	2.153	Kopp. A. C. P. 36, 1.
" " "	"	2.245	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.24034, 4°	Playfair and Joule. J. C. S. 1, 138.
" " "	"	2.153	Schiff. A. C. P. 107, 64.
" " "	"	2.249	Schröder. Dm. 1873.
" " "	"	2.235	Schröder. J. P. C. (2), 19, 266.
" " "	"	2.240	
Ammonium zinc sulphate	$Am_2 Zn (S O_4)_2$	2.222	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.258	Schröder. J. P. C. (2), 19, 266.
" " "	"	2.288	
" " "	$Am_2 Zn (S O_4)_2 . 6 H_2 O$	1.897, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.910	Schiff. A. C. P. 107, 64.
" " "	"	1.919	Schröder. J. P. C. (2), 19, 266.
" " "	"	1.921	
" " "	"	1.925	
Potassium cadmium sulphate.	$K_2 Cd (S O_4)_2 . 6 H_2 O$	2.438	Schiff. A. C. P. 107, 64.
Ammonium cadmium sulphate.	$Am_2 Cd (S O_4)_2 . 6 H_2 O$	2.073	" "
Potassium manganese sulphate.	$K_2 Mn (S O_4)_2$	3.008, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	3.031	Schröder. Ber. 7, 1118.
" " "	"	2.954	Schröder. J. P. C. (2), 19, 266.
" " "	$K_2 Mn (S O_4)_2 . 4 H_2 O$	2.313	" "
Ammonium manganese sulphate.	$Am_2 Mn (S O_4)_2 . 6 H_2 O$	1.930	Thomson. Gm. H. 1, 71.
" " "	"	1.823	Schröder. J. P. C. (2), 19, 266.
" " "	"	1.827	
Potassium iron sulphate	$K_2 Fe (S O_4)_2$	3.042	" "

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Potassium iron sulphate	$K_2Fe(SO_4)_2 . 6H_2O$	2.202	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.189	Schiff. A. C. P. 107, 64.
Ammonium iron sulphate	$Am_2Fe(SO_4)_2 . 6H_2O$	1.848, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.813	Schiff. A. C. P. 107, 64.
" " "	"	1.886	Schröder. J. P. C. (2), 19, 266.
Potassium nickel sulphate	$K_2Ni(SO_4)_2$	2.897, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	3.086	Schröder. Ber. 7, 1117.
" " "	$K_2Ni(SO_4)_2 . 6H_2O$	2.111	Kopp. A. C. P. 36, 1.
" " "	"	2.136	Kopp. A. C. P. 36, 1.
" " "	"	1.921	Schröder. J. P. C. (2), 19, 266.
" " "	"	1.922	Schröder. J. P. C. (2), 19, 266.
Ammonium nickel sulphate.	$Am_2Ni(SO_4)_2 . 6H_2O$	1.783	Kopp. A. C. P. 36, 1.
" " "	"	1.915	Kopp. A. C. P. 36, 1.
" " "	"	1.921	Kopp. A. C. P. 36, 1.
Potassium cobalt sulphate	$K_2Co(SO_4)_2$	3.105	Schröder. Ber. 7, 1118.
" " "	$K_2Co(SO_4)_2 . 6H_2O$	2.154	Schiff. A. C. P. 107, 64.
" " "	"	2.205, 16°.8	Pettersson. U. N. A. 1876.
" " "	"	2.214, 16°.6	Pettersson. U. N. A. 1876.
Ammonium cobalt sulphate.	$Am_2Co(SO_4)_2 . 6H_2O$	1.873	Schiff. A. C. P. 107, 64.
" " "	"	1.902, 18°	Pettersson. U. N. A. 1876.
" " "	"	1.907, 16°.6	Pettersson. U. N. A. 1876.
" " "	"	1.893	Schröder. J. P. C. (2), 19, 266.
Thallium cobalt sulphate	$Tl_2Co(SO_4)_2 . 6H_2O$	3.729, 16°.2	Pettersson. U. N. A. 1876.
" " "	"	3.769, 16°	Pettersson. U. N. A. 1876.
" " "	"	3.803, 16°.4	Pettersson. U. N. A. 1876.
Potassium copper sulphate.	$K_2Cu(SO_4)_2$	2.797, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.784, 20°.5	Favre and Valson. C. R. 77, 579.
" " "	"	2.754	Schröder. Dm. 1873.
" " "	"	2.779	Schröder. Dm. 1873.
" " "	"	2.789	Schröder. Dm. 1873.
" " "	$K_2Cu(SO_4)_2 . 6H_2O$	2.244, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.16376, 4°	Playfair and Joule. J. C. S. 1, 138.
" " "	"	2.137	Schiff. A. C. P. 107, 64.
" " "	"	2.186, 18°.8	Favre and Valson. C. R. 77, 579.
" " "	"	2.224	Schröder. Dm. 1870.
" " "	"	2.221, 16°	Pettersson. U. N. A. 1876.
Ammonium copper sulphate.	$Am_2Cu(SO_4)_2$	2.197, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.348	Schröder. J. P. C. (2), 19, 266.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium copper sulphate.	$Am_2Cu(SO_4)_2 . 6H_2O$	1.756	Kopp. A. C. P. 36, 1.
" " "	"	1.757	
" " "	"	1.891, m. of 2.	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.89378, 4°	Playfair and Joule. J. C. S. 1, 138.
" " "	"	1.931	Schiff. A. C. P. 107, 64.
" " "	"	1.925, 15°.2	Pettersson. U. N. A. 1876.
" " "	"	1.931, 15°.8	
" " "	"	1.870, 22°	Evans. F. W. C.
Magnesium zinc sulphate	$MgZn(SO_4)_2 . 14H_2O$	1.817	Schiff. A. C. P. 107, 64.
Magnesium cadmium sulphate.	$MgCd(SO_4)_2 . 14H_2O$	1.983	" "
Magnesium iron sulphate	$MgFe(SO_4)_2 . 14H_2O$	1.733	" "
Magnesium copper sulphate.	$MgCu(SO_4)_2 . 14_2HO$	1.813	" "
Fauserite	$MgMn_2(SO_4)_3 . 15H_2O$	1.88	Breithaupt. J. 18, 901.
Zinc iron manganese sulphate. Native.	$Zn\ Fe\ Mn_5\ (SO_4)_7 . 28\ H_2O$	2.1627	Iles. A. C. J. 3, 420.
Mendozite	$NaAl(SO_4)_2 . 11H_2O$	1.88	Thomson. Dana's Min.
Sodium aluminum alum	$NaAl(SO_4)_2 . 12H_2O$	1.641	Schiff. A.C.P. 107, 64.
" " "	"	1.567	Buignet. J. 14, 15.
" " "	"	1.686, 18°	Pettersson. U. N. A. 1874.
" " "	"	1.693, 18°	
" " "	"	1.694, 18°.2	
" " "	"	1.73	Soret. J.C.S. 50, 596.
Potassium aluminum alum.*	$KAl(SO_4)_2$	2.228, m. of 2.	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.6846 15°	Pettersson. U. N. A. 1876.
" "	"	2.6905 15°	
" "	$KAl(SO_4)_2 . 12H_2O$	1.7109	Hassenfratz. Ann. 28, 3.
" "	"	1.753	Dufrenoy.
" "	"	1.724	Kopp. A.C.P. 36, 1.
" "	"	1.726, m. of 4.	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.75125, 4°	Playfair and Joule. J. C. S. 1, 138.
" "	"	1.711	Schröder. Dm. 1873.
" "	"	1.749, 21°	Pettersson. U. N. A. 1874.
" "	"	1.753, 21°	
" "	"	1.755, 20°.5	
" "	"	1.758	W. C. Smith. Am. J. P. 53, 145.
" "	"	1.722	Schiff. A. C. P. 107, 64.
" "	"	1.757	Buignet. J. 14, 15.
" "	"	1.7505	Stolba. J. P. C. 97, 503.

* The dehydrated alums are included here for convenience.

Name.	Formula.	Sp. Gravity.	Authority.
Potassium aluminum alum	$K\,Al\,(S\,O_4)_2.\ 12\,H_2O$	1.7546, 0°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
" "	"	1.7542, 10°	
" "	"	1.7538, 20°	
" "	"	1.7532, 30°	
" "	"	1.7526, 40°	
" "	"	1.7521, 50°	
" "	"	1.7501, 60°	
" "	"	1.7474, 70°	
" "	"	1.7252, 80°	
" "	"	1.7067, 90°	
" "	"	1.758, 21°, not pressed.	Spring. Ber. 16, 2724.
" "	"	1.756, 16°.5, once pressed.	
" "	"	1.750, 16°.5, twice pressed	
" "	"	1.735	Soret. C. R. 99, 867.
Rubidium aluminum alum	$Rb\,Al\,(S\,O_4)_2$	2.7832, 14°.8	Pettersson. U. N. A. 1876.
" " "	"	2.7910, 15°	
" " "	$Rb\,Al(S\,O_4)_2.\ 12\,H_2O$	1.874	Redtenbacher. S. W. A. 51, 248.
" " "	"	1.890, 20°	Pettersson. U. N. A. 1874.
" " "	"	1.891, 20°	
" " "	"	1.8667, 0°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
" " "	"	1.8648, 10°	
" " "	"	1.8639, 20°	
" " "	"	1.8635, 30°	
" " "	"	1.8631, 40°	
" " "	"	1.8624, 50°	
" " "	"	1.8619, 60°	
" " "	"	1.8611, 70°	
" " "	"	1.8596, 80°	
" " "	"	1.8578, 90°	
" " "	"	1.8554, 100°	
" " "	"	1.883, 20°.6	Setterberg. Ber. 15, 1740.
" " "	"	1.886, 20°.6	
" " "	"	1.852	Soret. C. R. 99, 867.
Cæsium aluminum alum	$Cs\,Al\,(S\,O_4)_2.\ 12\,H_2O$	2.003	Redtenbacher. S. W. A. 51, 248.
" " "	"	1.994, 18°.1	Pettersson. U. N. A. 1874.
" " "	"	2.000, 20°	
" " "	"	2.0215, 0°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
" " "	"	2.0210, 10°	
" " "	"	2.0205, 20°	
" " "	"	2.0200, 30°	
" " "	"	3.0194, 40°	
" " "	"	2.0189, 50°	
" " "	"	2.0186, 60°	
" " "	"	2.0173, 70°	
" " "	"	2.0153, 80°	
" " "	"	2.0107, 90°	
" " "	"	2.0061, 100°	
" " "	"	1.988, 18°, not pressed.	Spring. Ber. 16, 2724.
" " "	"	2.000, 20°, once pressed.	
" " "	"	2.005, 20°, twice pressed	

Name.	Formula.	Sp. Gravity.	Authority.
Cæsium aluminum alum	$CsAl(SO_4)_2.12H_2O$	1.911	Soret. C. R. 99, 867.
Ammonium aluminum alum.	$Am\,Al\,(SO_4)_2$	2.039	Playfair and Joule. M. C. S. 2. 401.
" "	$AmAl(SO_4)_2.12H_2O$	1.602	Breithaupt. J. P. C. 11, 151.
" "	"	1.625	Kopp. A. C. P. 36, 1.
" "	"	1.626	
" "	"	1.625	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.621	Schiff. A. C. P. 107, 64.
" "	"	1.653	Buignet. J. 14, 15.
" "	"	1.642, m. of 4	Pettersson. U. N. A. 1874.
" "	"	1.638 } extremes 18°.2-19°.5	
" "	"	1.647	
" "	"	1.661	W. C. Smith. Am. J. P. 53, 147.
" "	"	1.6357, 0°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
" "	"	1.6351, 10°	
" "	"	1.6346, 20°	
" "	"	1.6345, 30°	
" "	"	1.6340, 40°	
" "	"	1.6336, 50°	
" "	"	1.6332, 60°	
" "	"	1.6328, 70°	
" "	"	1.6323, 80°	
" "	"	1.6299, 90°	
" "	"	1.6275, 100°	
" "	"	1.641, 18°, not pressed.	Spring. Ber. 16, 2724.
" "	"	1.629, 16°.5, once pressed.	
" "	"	1.634, 18°, twice pressed	
" "	"	1.631	Soret. C. R. 99, 867.
Methylamine aluminum alum.	$(NH_2CH_3)Al(SO_4)_2.12H_2O$.	1.568	" "
Thallium aluminum alum	$Tl\,Al\,(SO_4)_2.2H_2O$	3.645, 17°	Pettersson. U. N. A. 1874.
" " "	$Tl\,Al\,(SO_4)_2.12H_2O$	2.348, 15°.8	" "
" " "	"	2.366, 21°	
" " "	"	2.368, 20°.6	
" " "	"	2.384, 17°	
" " "	"	2.320, 22°, not pressed.	Spring. Ber. 16, 2724.
" " "	"	2.314, 16°.5, once pressed.	
" " "	"	2.314, 18°, twice pressed	
" " "	"	2.3226, 0°	Spring. Ber. 17, 408.
" " "	"	2.3213, 10°	
" " "	"	2.3200, 20°	
" " "	"	2.3189, 30°	
" " "	"	2.3184, 40°	
" " "	"	2.3181, 50°	
" " "	"	2.257	Soret. C. R. 99, 867.
Potassium chrome alum	$K\,Cr\,(SO_4)_2$	2.1583, 14°.1	Pettersson. U. N. A. 1876.
" " "	"	2.1618, 14°.4	

Name.	Formula.	Sp. Gravity.	Authority.
Potassium chrome alum	$K Cr (S O_4)_2 . 12 H_2 O$	1.848	Kopp. A. C. P. 36, 1.
" " "	"	1.826	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.85609, 4°	Playfair and Joule. J. C. S. 1, 138.
" " "	"	1.845, 12°	Schiff. A. C. P. 107, 64.
" " "	"	1.839, 21°	Pettersson. U. N. A. 1874.
" " "	"	1.840, 21°	
" " "	"	1.841, 20°.2	
" " "	"	1.849, 21°	
" " "	"	1.807	Schröder. Dm. 1873.
" " "	"	1.808	
" " "	"	1.8278, 0°	Spring. Ber. 15, 1254, and Bei. 6, 648. Also a series in Ber. 17, 408.
" " "	"	1.8273, 10°	
" " "	"	1.8269, 20°	
" " "	"	1.8265, 30°	
" " "	"	1.8260, 40°	
" " "	"	1.8255, 50°	
" " "	"	1.8223, 60°	
" " "	"	1.8044, 70°	
" " "	"	1.7456, 80°	
" " "	"	1.828, 20°, not pressed.	Spring. Ber. 16, 2724.
" " "	"	1.823, 16°.5, once pressed.	
" " "	"	1.817	Soret. C. R. 99, 867.
Rubidium chrome alum	$Rb Cr (S O_4)_2 . 12 H_2 O$	1.967, 16°.8	Pettersson. U. N. A. 1874.
" " "	"	1.969, 16°.8	
" " "	"	1.946	Soret. C. R. 99, 867.
Cæsium chromium alum	$Cs Cr (S O_4)_2 . 12 H_2 O$	2.043	" "
Ammonium chrome alum	$Am Cr (S O_4)_2$	1.9943, 14°.7	Pettersson. U. N. A. 1876.
" " "	$Am Cr (S O_4)_2 . 12 H_2 O$	1.738, 21°	Schrötter. P. A. 53, 513.
" " "	"	1.728, 20°	Pettersson. U. N. A. 1874.
" " "	"	1.719	Soret. C. R. 99, 867.
Thallium chrome alum	$Tl Cr (S O_4)_2 . 12 H_2 O$	2.392, 15°	Pettersson. U. N. A. 1874.
" " "	"	2.402, 18°	
" " "	"	2.236	Soret. C. R. 99, 867.
Potassium iron alum	$K Fe (S O_4)_2 . 12 H_2 O$	1.831	Topsoë. C. C. 4, 76.
" " "	"	1.819, 16°.8	Pettersson. U. N. A. 1874.
" " "	"	1.822, 17°.5	
" " "	"	1.831, 17°	
" " "	"	1.806	Soret. C. R. 99, 867.
Rubidium iron alum	$Rb Fe (S O_4)_2 . 12 H_2 O$	1.916	" "
Cæsium iron alum	$Cs Fe (S O_4)_2 . 12 H_2 O$	2.061	" "
Ammonium iron alum	$Am Fe (S O_4)_2$	2.54, 16°.8	Pettersson. U. N. A. 1874.
" " "	$Am Fe (SO_4)_2 . 12 H_2 O$	1.712	Kopp. A. C. P. 86, 1.
" " "	"	1.718	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.719	Topsoë. C. C. 4, 76.
" " "	"	1.700	Schröder. Dm. 1878.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ammonium iron alum	$AmFe(SO_4)_2 . 12H_2O$	1.720, 18°.2	Pettersson. U. N. A. 1874.
" " "	"	1.723, 18°	
" " "	"	1.725, 17°	
" " "	"	1.713	Soret. C. R. 99, 867.
Thallium iron alum	$TlFe(SO_4)_2 . 12H_2O$	2.351, 15	Pettersson. U. N. A. 1874.
" " "	"	2.385	Soret. C. R. 99, 867.
Potassium gallium alum	$KGa(SO_4)_2 . 12H_2O$	1.895	Soret. C. R. 101, 156.
Rubidium gallium alum	$RbGa(SO_4)_2 . 12H_2O$	1.962	" "
Ammonium gallium alum	$AmGa(SO_4)_2 . 12H_2O$	1.745	Soret. C. R. 99, 867.
" " "	"	1.776	Soret. C. R. 101, 156.
Rubidium indium alum	$RbIn(SO_4)_2 . 12H_2O$	2.065	" "
Cæsium indium alum	$CsIn(SO_4)_2 . 12H_2O$	2.241	" "
Ammonium indium alum	$AmIn(SO_4)_2 . 12H_2O$	2.011	Soret. C. R. 99, 867.
Sonomaite	$Mg_3Al_2(SO_4)_6 . 33H_2O$	1.604	Goldsmith. J. 30, 1297.
Roemerite. (Ferroso-ferric sulphate.)	$Fe_3(SO_4)_4 . 12H_2O$	2.15—2.18	Grailich. J. 11, 730.
Uranyl potassium sulphate	$UO_2K_2(SO_4)_2 . 2H_2O$	3.363, 19°.1	Schmidt. F. W. C.
Uranyl ammonium sulphate.	$UO_2Am_2(SO_4)_2 . 2H_2O$	3.0131, 21°.5	" "
Didymium ammonium sulphate.	$Am\ Di\ (SO_4)_2$	3.075, 15°	Cleve. U. N. A. 1885.
" "	"	3.086, 15°	
" "	$AmDi(SO_4)_2 . 4H_2O$	2.575, 15°	" "
Samarium ammonium sulphate.	$Am\ Sm\ (SO_4)_2$	3.191, 18°	" "
" "	$AmSm(SO_4)_2 . 4H_2O$	2.674, 18°.4	" "
" " "	"	2.677, 18°.4	

3d. Basic and Ammonio-Sulphates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrabasic zinc sulphate	$Zn_4SO_7 . 4H_2O$	3.122	Playfair and Joule. M. C. S. 2, 401.
Mercuric orthosulphate, or turpeth mineral.	Hg_3SO_6	8.319	" "
Tetrabasic copper sulphate	$Cu_4SO_7 . 4H_2O$	3.082, m. of 2	" "
" " " Langite.	"	3.48	Maskelyne. J. 18, 901.
	"	3.50	
Herrengrundite	$Cu_5S_2O_{11} . 7H_2O$	3.132	Winkler. Dana's Min., 3d App.
Brochantite*	$Cu_7S_2O_{13} . 5H_2O$	3.78—3.87	Magnus. P. A. 14, 141.
"	"	3.9069	G. Rose. Dana's Min.
" Warringtonite	"	3.39—3.47	Maskelyne. J. 18, 902.

* Composition uncertain, because of variations in the analyses.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lanarkite	$Pb_2 S O_5$	6.3—6.4	Thomson.
Linarite	$Pb Cu S O_5 . H_2 O$	5.43	Brooke. Ann. Phil. (2), 4, 117.
Alumian	$Al_2 S_2 O_7$	2.702	Breithaupt. J. 11, 730.
"	"	2.781	
Werthemanite	$Al_2 S O_6 . 3 H_2 O$	2.80	Raimondi. Dana's Min., 3d App.
Aluminite	$Al_2 S O_6 . 9 H_2 O$	1.66	Dana's Mineralogy.
Felsobanyite	$Al_4 S O_9 . 10 H_2 O$	2.33	Haidinger. J. 7, 863.
Alunite	$K_2 Al_6 S_4 O_{22} . 6 H_2 O$	2.481	Gautier-Lacroze. J. 16, 833.
Löwigite	$K_2 Al_6 S_4 O_{22} . 9 H_2 O$	2.58	Römer. J. 9, 877.
Zincaluminite	$Zn_6 Al_6 S_2 O_{21} . 18 H_2 O$	2.26	Bertrand and Damour. Z. K. M. 6, 298.
Ettringite	$Ca_6 Al_2 S_3 O_{18} . 32 H_2 O$	1.7504	Lehmann. N. J. 1874, 273.
Amarantite	$Fe_2 S_2 O_9 . 7 H_2 O$	2.11	Frenzel. M. P. M. 9, 398.
Raimondite	$Fe_4 S_3 O_{15} . 7 H_2 O$	3.190	Breithaupt. J. 19, 952.
"	"	3.222	
Hohmannite	$Fe_4 S_3 O_{15} . 13 H_2 O$	2.24	Frenzel. M. P. M. 9, 397.
Copiapite	$Fe_4 S_5 O_{21} . 12 H_2 O$	2.14	Borcher. Dana's Min.
Fibroferrite	$Fe_4 S_5 O_{21} . 27 H_2 O$	1.84	Smith. A. J. S. (2), 18, 375.
Carphosiderite	$Fe_6 S_4 O_{21} . 10 H_2 O$	2.728	Pisani. Dana's Min.
"	"	2.496—2.501	Breithaupt. Schw. J. 50, 314.
"	"	3.09	Lacroix. C. R. 103, 1037.
Jarosite	$K_2 Fe_8 S_5 O_{28} . 9 H_2 O$	3.256	Breithaupt. J. 6, 845.
Urusite	$Na_4 Fe_2 S_4 O_{17} . 8 H_2 O$	2.22	Frenzel J. 32, 1195.
Sideronatrite	$Na_2 Fe_2 S_3 O_{13} . 6 H_2 O$	2.153	Dana's Min., 3d App.
Silver ammonio-sulphate	$Ag_2 S O_4 . 4 N H_3$	2.918, m. of 2	Playfair and Joule. M. C. S. 2, 401.
Zincammonium sulphate	$Zn N_2 H_6 . S O_4$	2.479	" "
Tetramercurammonium sulphate.	$Hg_4 N_2 S O_4 . 2 H_2 O$	7.319	" "
Cuprammonium sulphate	$Cu N_2 H_6 . S O_4$	2.476	" "
" "	$Cu N_2 H_6 . S O_4 . 3 H_2 O$	1.950	" "
Copper ammonio-sulphate	$Cu S O_4 . 4 N H_3 . H_2 O$	1.790	" "
" "	"	1.809	
" "	"	2.133, 24°.3	Evans. F. W. C.
Roseocobalt iodosulphate	$Co_2 (N H_3)_{10} (S O_4)_2 I_2$	2.139 20°.5	Wilson. F. W. C.
" "	"	2.149	

NOTE.—Botryogen, clinophæite, johannite, lamprophanite, pissophanite, plagiocitrite, and wattevillite, being of uncertain composition, are omitted. See Dana's Mineralogy and appendixes.

XXIII. SELENITES AND SELENATES.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen selenite, or selenious acid.	$H_2 Se O_3$	3.123	Topsoë. C. C. 4, 76.
" " "	"	3.0066	Clausnizer. A. C. P. 196, 265.
Chalcomenite	$Cu Se O_3 . 2 H_2 O$	3.76	Des Cloizeaux and Damour. B. S. M. 4, 51.
Mercurous selenite	$8 Hg_2 O . 4 Se O_2$	7.35, 13°.5	Köhler. P. A. 89, 149.
Hydrogen selenate, or selenic acid. " "	$H_2 Se O_4$	2.524	Mitscherlich. P. A. 9, 629.
	"	2.625	
" " "	"	2.627	Fabian. J. 14, 130.
Lithium selenate	$Li_2 Se O_4 . H_2 O$	2.439	Topsoë. C. C. 4, 76.
" "	"	2.564, 18°	Pettersson. U. N. A. 1874.
" "	"	2.565, 19°.5	
Sodium selenate	$Na_2 Se O_4$	3.098	Topsoë. B. S. C. 19, 246.
" "	"	3.209, 17°.2	Pettersson. U. N. A. 1874.
" "	"	3.217, 17°.6	
" "	$Na_2 Se O_4 . 10 H_2 O$	1.584	Topsoë. C. C. 4, 76.
" "	"	1.612, m. of 5	Pettersson. U. N. A. 1874.
" "	"	1.603 extremes 17°.9–19°	
" "	"	1.621	
Potassium selenate	$K_2 Se O_4$	3.050	Topsoë. C. C. 4, 76.
" "	"	3.074, 18°	Pettersson. U. N. A. 1874.
" "	"	3.077, 19°	
" "	"	3.077, 21°	
Sodium potassium selenate	$Na_2 Se O_4 . 3 K_2 Se O_4$	3.095	Topsoë. C. C. 4, 76.
Rubidium selenate	$Rb_2 Se O_4$	3.923, m. of 5	Pettersson. U. N. A. 1874.
" "	"	3.896 extremes 18°–19°.8	
" "	"	3.943	
Cæsium selenate	$Cs_2 Se O_4$	4.31, 15°.2	Pettersson. U. N. A. 1876.
" "	"	4.34, 15°.5	
Ammonium selenate	$Am_2 Se O_4$	2.162	Topsoë. B. S. C. 19, 246.
" "	"	2.197, 18°	Pettersson. U. N. A. 1874.
" "	"	2.198, 18°.8	
Ammonium hydrogen selenate.	$Am H Se O_4$	2.409	Topsoë. C. C. 4, 76.
Silver selenate	$Ag_2 Se O_4$	5.92, 17°.2	Pettersson. U. N. A. 1874.
" "	"	5.93, 17°	
Silver ammonio-selenate	$Ag_2 Se O_4 . 4 N H_3$	2.854	Topsoë. C. C. 4, 76.
Thallium selenate	$Tl_2 Se O_4$	7.019, 18°	Pettersson. U. N. A. 1874.
" "	"	7.067, 18°.2	
Glucinum selenate	$Gl Se O_4 . 4 H_2 O$	2.029	Topsoë. C. C. 4, 76.
Magnesium selenate	$Mg Se O_4 . 6 H_2 O$	1.928	" "
" "	"	1.955, 15°.2	Pettersson. U. N. A. 1876.
" "	"	1.960, 15°.8	
Zinc selenate	$Zn Se O_4 . 5 H_2 O$	2.591	Topsoë. C. C. 4, 76.
" "	$Zn Se O_4 . 6 H_2 O$	2.325	" "
Cadmium selenate	$Cd Se O_4 . 2 H_2 O$	3.632	" "

Name.	Formula.	Sp. Gravity.	Authority.
Calcium selenate. Cryst	$CaSeO_4$	2.93	Michel. C. R. 106, 878.
" "	$CaSeO_4 \cdot 2H_2O$	2.676	Topsoë. C. C. 4, 76.
Strontium selenate. Cryst.	$SrSeO_4$	4.23	Michel. C. R. 106, 878.
Barium selenate	$BaSeO_4$	4.67, 22°	Schafarik. J. P. C. 90, 12.
" " Cryst.	"	4.75	Michel. C. R. 106, 878.
Lead selenate	$PbSeO_4$	6.37, 22°	Schafarik. J. P. C. 90, 12.
" "	"	6.22, 18°	Pettersson. U. N. A. 1874.
" "	"	6.23, 18°.2	
Manganese selenate	$MnSeO_4 \cdot 2H_2O$	2.949	Topsoë. B. S. C. 19, 246.
" "	"	3.001, 15°.8	Pettersson. U. N. A. 1876.
" "	"	3.012, 16°.6	
" "	$MnSeO_4 \cdot 5H_2O$	2.334	Topsoë. B. S. C. 19, 246.
" "	"	2.386 } 16°	Pettersson. U. N. A. 1876.
" "	"	2.389	
Iron selenate	$FeSeO_4 \cdot 7H_2O$	2.073	Topsoë. B. S. C. 19, 246.
Nickel selenate	$NiSeO_4 \cdot 6H_2O$	2.314	" "
" "	"	2.332, 14°.1	Pettersson. U. N. A. 1876.
" "	"	2.335, 18°.8	
" "	"	2.339, 13°.8	
Cobalt selenate	$CoSeO_4$	4.037, 14°.2	" "
" "	$CoSeO_4 \cdot 5H_2O$	2.512	Topsoë. C. C. 4, 76.
" "	$CoSeO_4 \cdot 6H_2O$	2.179	" "
" "	"	2.247, 14°.6	Pettersson. U. N. A. 1876.
" "	"	2.248, 17°	
" "	"	2.258, 15°.8	
" "	$CoSeO_4 \cdot 7H_2O$	2.135	Topsoë. C. C. 4, 76.
Copper selenate	$CuSeO_4 \cdot 5H_2O$	2.559	" "
" "	"	2.561, 19°.2	Pettersson. U. N. A. 1874.
" "	"	2.562, 17°.8	
Yttrium selenate	$Y_2(SeO_4)_3 \cdot 9H_2O$	2.6770, 18°	Cleve and Hoeglund. B. S. C. 18, 289.
" "	"	2.780	Topsoë. Quoted by Pettersson.
" "	"	2.661, 12°.8	Pettersson. U. N. A. 1876.
Erbium selenate	$Er_2(SeO_4)_3 \cdot 8H_2O$	3.516	Topsoë. Quoted by Pettersson.
" "	"	3.501, 13°.8	Pettersson. U. N. A. 1876.
" "	"	3.510, 14°	
" "	"	3.529, 13°.4	
" "	$Er_2(SeO_4)_3 \cdot 9H_2O$	3.171	Topsoë. Quoted by Pettersson.
Lanthanum selenate	$La_2(SeO_4)_3 \cdot 6H_2O$	3.48, 14°.4	Pettersson. U. N. A. 1876.
Didymium selenate	$Di_2(SeO_4)_3$	4.416 } 12°.5	Cleve. U. N. A. 1885.
" "	"	4.430	
" "	"	4.460 } 18°	
" "	"	4.461	
" "	$Di_2(SeO_4)_3 \cdot 5H_2O$	3.710, 13°.8	Pettersson. U. N. A. 1876.
" "	"	3.722, 13°.3	

Name.	Formula.	Sp. Gravity.	Authority.
Didymium selenate	$Di_2(SeO_4)_3.5H_2O$	3.677, 15°	Cleve. U. N. A. 1885.
" "	"	3.685, 18°.3	
Samarium selenate	$Sm_2(SeO_4)_3$	4.077, 10°	" "
" "	$Sm_2(SeO_4)_3.8H_2O$	3.326 } 13°	" "
" "	"	3.329	
" "	$Sm_2(SeO_4)_3.12H_2O$	3.009 } 10°	" "
" "	"	3.010	
Thorium selenate	$Th(SeO_4)_2.9H_2O$	3.026	Topsoë. B. S. C. 21, 121.
Magnesium potassium selenate.	$MgK_2(SeO_4)_2.6H_2O$	2.336	Topsoë. C. C. 4, 76.
Magnesium ammonium selenate.	$MgAm_2(SeO_4)_2.6H_2O$	2.035	Topsoë. B. S. C. 19, 246.
Zinc potassium selenate	$ZnK_2(SeO_4)_2.2H_2O$	3.210	Topsoë. C. C. 4, 76.
" " "	$ZnK_2(SeO_4)_2.6H_2O$	2.538	" "
Zinc ammonium selenate	$ZnAm_2(SeO_4)_2.6H_2O$	2.200	" "
Cadmium potassium selenate.	$CdK_2(SeO_4)_2.2H_2O$	3.376	" "
Cadmium ammonium selenate.	$CdAm_2(SeO_4)_2.2H_2O$	2.897	" "
" " "	$CdAm_2(SeO_4)_2.6H_2O$	2.307	" "
Manganese potassium selenate.	$MnK_2(SeO_4)_2.2H_2O$	3.070	Topsoë. B. S. C. 19, 246.
Manganese ammonium selenate.	$MnAm_2(SeO_4)_2.6H_2O$	2.093	Topsoë. C. C. 4, 76.
Iron ammonium selenate	$FeAm_2(SeO_4)_2.6H_2O$	2.160	" "
Nickel potassium selenate	$NiK_2(SeO_4)_2.6H_2O$	2.539	" "
" " "	"	2.580, m. of 5	Pettersson. U. N. A. 1876.
" " "	"	2.573 } extremes 16°.4-17°.3	
" " "	"	2.587	
Nickel ammonium selenate.	$NiAm_2(SeO_4)_2.6H_2O$	2.228	Topsoë. C. C. 4, 76.
" " "	"	2.274, 15°.8	Pettersson. U. N. A. 1876.
" " "	"	2.279, 16°	
Nickel thallium selenate	$NiTl_2(SeO_4)_2.6H_2O$	4.066, 13°.8	" "
Cobalt potassium selenate	$CoK_2(SeO_4)_2.6H_2O$	2.514	Topsoë. C. C. 4, 76.
" " "	"	2.531, 18°.8	Pettersson. U. N. A. 1876.
" " "	"	2.543, 17°.4	
Cobalt rubidium selenate	$CoRb_2(SeO_4)_2.6H_2O$	2.837, 18°.3	
" " "	"	2.838, 15°.6	" "
" " "	"	2.844, 18°.6	
Cobalt cæsium selenate	$CoCs_2(SeO_4)_2.6H_2O$	3.050, 18°.5	
" " "	"	3.061, 16°.7	" "
" " "	"	3.073, 18°.8	
Cobalt ammonium selenate	$CoAm_2(SeO_4)_2.6H_2O$	2.212	Topsoë. C. C. 4, 76.
" " "	"	2.225, 18°.8	
" " "	"	2.229, 17°	Pettersson. U. N. A. 1876.
" " "	"	2.248, 15°.8	
Cobalt thallium selenate	$CoTl_2(SeO_4)_2.6H_2O$	4.047, 13°.5	" "
" " "	"	4.059, 16°.5	
Copper potassium selenate	$CuK_2(SeO_4)_2.6H_2O$	2.527	Topsoë. C. C. 4, 76.
" " "	"	2.556, 17°	Pettersson. U. N. A. 1876.
" " "	"	2.557, 16°.4	
Copper ammonium selenate	$CuAm_2(SeO_4)_2.6H_2O$	2.221	Topsoë. C. C. 4, 76.
" " "	"	2.234, 17°.2	Pettersson. U. N. A. 1876.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium aluminum alum	$NaAl(SeO_4)_2 . 12H_2O$	2.061, 21°	Pettersson. U. N. A. 1874.
" " "	"	2.069, 20°.8	
" " "	"	2.071, 20°.8	
Potassium aluminum alum	$KAl(SeO_4)_2 . 12H_2O$	1.971	Weber. J. 12, 91.
" " "	"	1.998, 21°	Pettersson. U. N. A. 1874.
" " "	"	2.004, 20°.1	
Ammonium aluminum alum.	$Am Al (Se O_4)_2$	2.3676, 20°.4	Pettersson. U. N. A. 1876.
" "	$AmAl(SeO_4)_2 . 12H_2O$	1.892, m. of 4.	Pettersson. U. N. A. 1874.
" "	"	1.889 extremes 17°-20°.5	
" "	"	1.895	
Rubidium aluminum alum	$RbAl(SeO_4)_2 . 12H_2O$	2.132, 17°.2	" "
" " "	"	2.134, 21°	
" " "	"	2.135, 17°.2	
Cæsium aluminum alum	$CsAl(SeO_4)_2 . 12H_2O$	2.223, 18°.8	" "
" " "	"	2.225, 20°	
Thallium aluminum alum	$TlAl(SeO_4)_2 . 12H_2O$	2.492, 17°.5	" "
" " "	"	2.514, 17°	
Potassium chromium alum	$K Cr (Se O_4)_2$	2.5190, 20°.3	Pettersson. U. N. A. 1876.
" " "	$KCr(SeO_4)_2 . 12H_2O$	2.076, 17°.6	Pettersson. U. N. A. 1874.
" " "	"	2.077, 17°	
" " "	"	2.081, 17°.2	
Ammonium chromium alum.	$Am Cr (Se O_4)_2$	2.3585, 15°.5	Pettersson. U. N. A. 1876.
" "	$AmCr(SeO_4)_2 . 12H_2O$	1.980 20°	Pettersson. U. N. A. 1874.
" "	"	1.984	
Rubidium chromium alum	$RbCr(SeO_4)_2 . 12H_2O$	2.214, 18°.8	" "
" " "	"	2.223, 17°	
Thallium chromium alum	$TlCr(SeO_4)_2 . 12H_2O$	2.630, 20	" "
Didymium potassium selenate.	$Di K (Se O_4)_2$	3.839, 13°	Cleve. U. N. A. 1885.
" " "	$Di K (SeO_4)_2 . 5H_2O$	3.174 13°	" "
" " "	"	3.178	
Didymium ammonium selenate.	$DiAm(SeO_4)_2 . 5H_2O$	2.957 15°	" "
" "	"	2.961	
Samarium potassium selenate.	$Sm K (Se O_4)_2$	4.098 10°	" "
" "	"	4.129	
" " "	$Sm K (SeO_4)_2 . 3H_2O$	3.566, 10°	" "
" " "	"	3.540, 18°	
Samarium ammonium selenate.	$Sm Am (Se O_4)_2$	3.805, 14°	" "
" " "	$SmAm SeO_4)_2 . 3H_2O$	3.277, 14°	" "
" " "	"	3.263, 15°	
" " "	"	3.260, 18°.6	
Potassium selenate with nickel sulphate.	$K_2SeO_4 . NiSO_4 . 6H_2O$	2.34	Gerichten. B. S. C 20, 80.

NOTE.—For the sp. gr. of some mixtures of sulphates and selenates see Pettersson, Ber. 9, 1676.

XXIV. TELLURATES.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen tellurate, or telluric acid.	$H_2 Te O_4$	3.425, 18°.8	Clarke. A. J. S. (3), 16, 206.
" " "	"	3.440, 19°.2	
" " "	"	3.458, 19°.1	
" " "	$H_2 Te O_4 . 2 H_2 O$	2.340	Oppenheim. J. 10, 218.
" " "	"	2.9649, 26°.5	Clarke. A. J. S. (3), 16, 206.
" " "	"	2.9999, 25°.5	
Ammonium tellurate	$Am_2 Te O_4$	2.986, 24°.5	" "
" "	"	3.012, 25°	
" "	"	3.024, 24°.5	
Thallium tellurate	$Tl_2 Te O_4$	6.742, 16°	" "
" "	"	6.760, 17°.5	
" "	$2 Tl_2 Te O_4 . H_2 O$	5.687, 22°	" "
" "	"	5.712, 20°	
Barium tellurate	$Ba Te O_4$	4.5305, 10°	Clarke. A. J. S. (3), 14, 286.
" "	"	4.5486, 10°.5	

XXV. CHROMATES.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium chromate	$Na_2 Cr O_4$	2.7104, 16°.5	Abbot. F. W. C.
" "	"	2.7358, 12°	
" "	$Na_2 Cr O_4 . 10 H_2 O$	1.4828, 20°	" "
Sodium dichromate	$Na_2 Cr_2 O_7 . 2 H_2 O$	2.5246, 13°	Stanley. C. N. 54, 195.
Potassium chromate	$K_2 Cr O_4$	2.612	Thomson.
" "	"	2.6402	Karsten. Schw. J. 65, 394.
" "	"	2.705	Kopp. A. C. P. 36, 1.
" "	"	2.682, m. of 10	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.711	Playfair and Joule. J. C. S. 1, 137.
" "	"	2.72309, 4°	
" "	"	2.678, 15°.5	Holker. P. M. (3), 27, 218.
" "	"	2.691	Schiff. A. C. P. 107, 64.
" "	"	2.7343	Stolba. J. P. C. 97, 503.
" "	"	2.719	Schröder. Dm. 1873.
" "	"	2.722	
" "	"	2.7403, 0°	Spring. Ber. 15, 1940.
" "	"	2.7374, 10°	
" "	"	2.7345, 20°	
" "	"	2.7317, 30°	
" "	"	2.7288, 40°	

Name.	Formula.	Sp. Gravity.	Authority.
Potassium chromate	$K_2\ Cr\ O_4$	2.7258, 50°	Spring. Ber. 15, 1940.
" "	"	2.7227, 60°	
" "	"	2.7169, 70°	
" "	"	2.7110, 80°	
" "	"	2.7102, 90°	
" "	"	2.7095, 100°	
Potassium dichromate	$K_2\ Cr_2\ O_7$	2.6027	Karsten. Schw. J. 65, 394.
" "	"	2.624	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.692, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	2.689	Schabus. J. 3, 312.
" "	"	2.721	Schiff. A. C. P. 107, 64.
" "	"	2.6616, 15°	Stolba. J. P. C. 97, 503.
" "	"	2.6806, 15°	
" " Pulv.	"	2.702	Schröder. Ber. 11, 2019.
" " After fusion.	"	2.677	
" " After fusion.	"	2.751	
" "	"	2.694	W. C. Smith. Am. J. P. 53, 145.
Potassium trichromate	$K_2\ Cr_3\ O_{10}$	2.655, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.613	Bothe. J. 2, 272.
" "	"	2.676	Schröder. A. C. P. 174, 249.
" "	"	2.702	
Potassium chromium chromate.	$K_2\ Cr_5\ O_{13}.\ H_2\ O$	2.28, 14°	Tommasi. B. S. C. (2), 17, 396.
Ammonium chromate	$Am_2\ Cr\ O_4$	1.9138, 12°	Abbot. F. W. C.
" "	"	1.9203, 12°	
" "	"	1.860	Schröder. Dm. 1873.
" "	"	1.871	
Ammonium dichromate	$Am_2\ Cr_2\ O_7$	2.367	Schiff. A. C. P. 107, 64.
" "	"	2.152	Schröder. Dm. 1873.
" "	"	2.153	
" "	"	2.1223, 16°	Abbot. F. W. C.
" "	"	2.1805, 17°	
Silver chromate	$Ag_2\ Cr\ O_4$	5.770	Playfair and Joule. M. C. S. 2, 401.
" "	"	5.536	Rettig. A. C. P. 173, 72.
" "	"	5.463	Schröder. Dm. 1873.
" "	"	5.583	
Silver dichromate	$Ag_2\ Cr_2\ O_7$	4.662	" "
" "	"	4.676	
Silver ammonio-chromate	$Ag_2\ Cr\ O_4.\ 4\ N\ H_3$	3.063, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.717	Topsoë. C. C. 4, 76.
Magnesium chromate	$Mg\ Cr\ O_4.\ H_2\ O$	2.2301, 17°	Abbot. F. W. C.
" "	"	2.2886, 17°	
" "	$Mg\ Cr\ O_4.\ 7\ H_2\ O$	1.66, 15°	Kopp. A. C. P. 42, 97.
" "	"	1.75, 12°	Bödeker. B. D. Z.
" "	"	1.7613, 16°	Abbot. F. W. C.
Trimercuric chromate	$Hg_3\ Cr\ O_6$	7.171, 18°.6	H. Stallo. F. W. C.
Strontium chromate	$Sr\ Cr\ O_4$	3.353	Schröder. Dm. 1873.

Name.	Formula.	Sp. Gravity.	Authority.
Barium chromate	$Ba\ Cr\ O_4$	3.90, 11°	Bödeker and Giesecke. B. D. Z.
" "	"	4.49, 23°	Schafarik. J. P. C. 90, 12.
" "	"	4.5044	Schweitzer. University of Missouri. Special pub., 1876.
" "	"	4.296	Schröder. Dm. 1873.
" "	"	4.304	
" " Cryst.	"	4.60	Bourgeois. C. N. 39, 123.
Lead chromate	$Pb\ Cr\ O_4$	6.004	Mohs. See Böttger.
" "	"	5.951	Breithaupt. "
" "	"	5.653	Playfair and Joule. M. C. S. 2, 401.
" " Artif. cryst.	"	6.118	Manross. J. 5, 12.
" " " "	"	6.29	Bourgeois. B. S. C. 47, 884.
" " Native	"	5.965, m. of 3.	Schröder. Ber. 11, 2019.
Diplumbic chromate	$Pb_2\ Cr\ O_5$	6.266	Playfair and Joule. M. C. S. 2, 401.
Phœnicochroite	$Pb_3\ Cr_2\ O_9$	5.75	Dana's Mineralogy.
Potassium ammonium chromate.	$K\ Am\ Cr\ O_4$	2.278	Schröder. Dm. 1873.
"	"	2.290	
Potassium calcium chromate.	$K_2Ca(CrO_4)_2 .\ 2H_2O$	2.499	" "
" "	"	2.505	
" " "	$K_2Ca_4(CrO_4)_5 .\ 2H_2O$	2.772	" "
" " "	"	2.802	
Magnesium potassium chromate.	$K_2Mg(CrO_4)_2 .\ H_2O$	2.592	" "
"	"	2.608	
" "	"	2.5804 } 19°.5	Abbot. F. W. C.
" "	"	2.5966	
Magnesium ammonium chromate.	$Am_2Mg(CrO_4)_2 .6H_2O$	1.8278, 16°	" "
"	"	1.8293, 17°	
" "	"	1.8595, 16°	
Vauquelinite	$Pb_3\ Cu\ Cr_3\ O_9$	5.5—5.78	Dana's Mineralogy.
Potassium chlorochromate	$K\ Cr\ O_3\ Cl$	2.466	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.49702, 4°	Playfair and Joule. J. C. S. 1, 137.
Sodium chromiodate	$Na\ Cr\ I\ O_6 .\ H_2\ O$	3.21	Berg. C. R. 104, 1514.
Potassium chromiodate	$K\ Cr\ I\ O_6$	3.66	" "
Ammonium chromiodate	$Am\ Cr\ I\ O_6$	3.50	" "

XXVI. MANGANITES, MANGANATES, AND PERMANGANATES.

Name.	Formula.	Sp. Gravity.	Authority.
Barium manganite	$Ba\ Mn\ O_3$	5.85	Rousseau and Saglier. C. R. 98, 141.
Barium manganate	$Ba\ Mn\ O_4$	4.85, 23°	Schafarik. J. P. C. 90, 12.
Potassium permanganate	$K\ Mn\ O_4$	2.709	Kopp. J. 16, 4.
" "	"	2.710	Kopp. J. 16, 4.

XXVII. MOLYBDATES.

Name.	Formula.	Sp. Gravity.	Authority.
Ammonium molybdate	$Am_2\ Mo\ O_4$	2.238	Various samples. Schröder. Ber. 11, 2212.
" "	"	2.261	Various samples. Schröder. Ber. 11, 2212.
" "	"	2.270	Various samples. Schröder. Ber. 11, 2212.
" "	"	2.286	Various samples. Schröder. Ber. 11, 2212.
" "	"	2.295	Various samples. Schröder. Ber. 11, 2212.
" "	$18\ Mo\ O_3.\ 14\ N\ H_3.\ (O\ H)_6.\ 18\ H_2\ O.$	2.975	Baerwald. J. C. S. 50, 17.
Strontium molybdate	$Sr\ Mo\ O_4$	4.1348, 21°	F. O. Marsh. F. W. C.
" "	"	4.1554, 20°.5	F. O. Marsh. F. W. C.
Barium molybdate	$Ba\ Mo\ O_4$	4.6483, 19°.5	" "
" "	"	4.6589, 17°.5	" "
Lead molybdate	$Pb\ Mo\ O_4$	8.11, artificial	Manross. J. 5, 11.
" "	"	6.62 "	Cossa. G. C. I. 16, 324.
" " Wulfenite	"	6.76	Haidinger.
" " "	"	6.95	Smith. J. 8, 963.
Cerium molybdate	$Ce_2\ (Mo\ O_4)_3$	4.56, cryst.	Cossa. G. C. I. 16, 324.
" "	"	4.82, ppt.	Cossa. G. C. I. 16, 324.
Didymium molybdate	$Di_2\ (Mo\ O_4)_3$	4.75, cryst.	" "
Samarium molybdate	$Sm_2\ (Mo\ O_4)_3$	5.95	Cleve. B. S. C. 43, 162.
Samarium sodium molybdate.	$Sm\ Na\ (Mo\ O_4)_2$	5.265	Cleve. U. N. A. 1885.

XXVIII. TUNGSTATES.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium tungstate	$Na_2 W O_4$	4.1743, 20°.5	J. L. Davis. F. W. C.
" "	"	4.1833, 18°.5	
" "	$Na_2 W O_4 . 2 H_2 O$	3.2314, 19°	" "
" "	"	3.2588, 17°.5	
Sodium metatungstate	$Na_2 W_4 O_{13} . 10 H_2 O$	3.8467, 13°	Scheibler. J. 14, 219.
Sodium polytungstate	$Na_6 W_7 O_{24}$	5.4983	Scheibler. J. 14, 216.
" "	$Na_6 W_7 O_{24} . 16 H_2 O$	3.987, 14°	" "
Sodium tungstoso-tungstate.	$Na_2 W_3 O_9$*	6.617	Wright. J. 4, 348.
" " "	$Na_2 W_4 O_{11}$	7.283	Scheibler. J. 14, 223.
Potassium tungstoso-tungstate.	$K_2 W_4 O_{12}$*	7.085	Two preparations. Knorre. J. P. C. (2), 27, 62.
" " "	"	7.095	
" " "	"	7.135	
" " "	$K_2 W_5 O_{12}$	7.6	Zettnow. J. 20, 224.
" " "	$K_2 W_8 O_{25}$	6.53	Knorre. J. P. C. (2), 27, 92.
Sodium potassium tungstoso-tungstate.	$5 K_2 W_4 O_{12} . 2 Na_2 W_5 O_{15}$.	7.112	Knorre. J. P. C. (2), 27, 62.
"		7.121	
Calcium tungstate	$Ca W O_4$	6.076, artif.	Manross. J. 5, 11.
" " Scheelite	"	6.04	Karsten. Schw. J. 65, 394.
" " "	"	6.03	Rammelsberg. J. 3, 752.
" " "	"	6.02	Bernoulli. J. 13, 783.
Barium tungstate	$Ba W O_4$	5.0035, 13°.5	J. L. Davis. F. W. C.
" "	"	5.0422, 15°	
Barium metatungstate	$Ba W_4 O_{13} . 9 H_2 O$	4.298, 14°	Scheibler. J. 14, 220.
Lead tungstate	$Pb W O_4$	8.232, artif.	Manross. J. 5, 11.
" "	"	8.238 "	
" "	"	8.1032	Kerndt. J. P. C. 42, 118.
" "	"	8.1275	
Manganese tungstate	$Mn W O_4$	6.7, artif.	Geuther and Forsberg. J. 14, 224.
" " Hübnerite.	"	7.14	Breithaupt. Dana's Min.
" " "	"	7.177, 24°	Hillebrand. A. J. S. (3), 27, 357.
Iron tungstate	$Fe W O_4$	7.1, artif.	Geuther and Forsberg. J. 14, 224.
" " Ferberite	"	7.169	Rammelsberg. J. 17, 855.
" " "	"	6.801	Breithaupt. Dana's Min.
" " Reinite	"	6.640	Lüdecke. J. 32, 1196.
Iron manganese tungstate	$2 Mn W O_4 . 3 Fe W O_4$	7.0, artif.	Geuther and Forsberg. J. 14, 224.

* Philipp (Ber. 15, 506) finds the specific gravity of all the "tungsten bronzes" to vary between 7.2 and 7.3, at 16°—18°.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Wolfram*	$(Mn\ Fe)\ W\ O_4$	7.155	Mohs. See Böttger.
"	"	7.097	Gehlen. " "
" $Fe_3 : Mn$	"	7.4581	Sipöcz. Ber. 19, 95.
Nickel tungstate	$Ni\ W\ O_4$	6.8522, 22°	J. L. Davis. F. W. C.
" "	"	6.8896, 20°.5	
Cerium tungstate	$Ce_2\ (W\ O_4)_3$	6.514, 12°	Cossa and Zechini. Ber. 13, 1861.
Didymium tungstate	$Di_2\ (W\ O_4)_3$	6.69, 14°	Cossa. Ber. 14, 107.
Samarium tungstate	$Sm_2\ O_3.\ 12\ W\ O_3.\ 35\ H_2\ O.$	3.992 18°.4	Cleve. U. N. A. 1885.
" "		3.996 18°.4	

XXIX. BORATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydrogen borate, or boric acid.	$H_3\ B\ O_3$	1.479	Kirwan.
" " "	"	1.4347, 15°	Stolba. J. 16, 667.
" " "	"	1.493, 20°.5	Favre and Valson. C. R. 77, 579.
" " "	"	1.5463, 0°	Ditte. Bei. 2, 67.
" " "	"	1.5172, 12°	
" " "	"	1.4165, 60°	
" " "	"	1.3828, 80°	
Sodium diborate	$Na_2\ B_4\ O_7$	2.367	Filhol. Ann. (3), 21, 415.
" "	"	2.371, 20°	Favre and Valson. C. R. 77, 579.
" "	"	2.368, 16°	Bedson and Williams. Ber. 14, 2553.
" "	"	2.370, 14°.2	
" "	"	2.373, 18°.5	
" "	"	2.5, fused	Quincke. P. A. 135, 642.
" "	$Na_2\ B_4\ O_7.\ 5\ H_2\ O$	1.815	Payen. Q. J. S. 1828 (1), 483.
" "	$Na_2\ B_4\ O_7.\ 10\ H_2\ O$	1.757	Wattson.
" "	"	1.723	Hassenfratz. Ann. 28, 3.
" "	"	1.716	Mohs. See Böttger.
" "	"	1.74	Payen. Q. J. S. 1828 (1), 483.
" "	"	1.730, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.692	Filhol. Ann. (3), 21, 415.
" "	"	1.692	Buignet. J. 14, 15.
" "	"	1.7156	Stolba. J. P. C. 97, 503.
" "	"	1.711, 20°	Favre and Valson. C. R. 77, 579.
" "	"	1.736	W. C. Smith. Am. J. P. 53, 148.

*See Dana's Mineralogy for many other determinations.

Name.	Formula.	Sp. Gravity.	Authority.
Potassium borate	$K_2 B_4 O_7$	1.740	Buignet. J. 14, 15.
Pinnoite	$Mg B_2 O_4 . 3 H_2 O$	2.27	Staute. Ber. 17, 1584.
Magnesium borate	$Mg_3 B_2 O_6$	2.987	Ebelmen. J. 4, 13.
Szaibelyite	$Mg_5 B_4 O_{11} . 3 H_2 O$	3.0	Peters. J. 16, 836.
Colemanite	$Ca_2 B_6 O_{11} . 5 H_2 O$	2.428	Evans. J. 37, 1927.
Priceite	$Ca_3 B_8 O_{15} . 6 H_2 O$	2.262	Silliman. A. J. S. (3), 6, 128.
"	"	2.298	
" Pandermite	"	2.48	v. Rath. Dana's Min., 3d App.
Lead borate	$Pb B_2 O_4$	5.598	Herapath. J. 2, 227.
Lead hydrogen borate	$Pb H B_3 O_6$	5.235	" "
Jeremerewite	$Al B O_3$	3.28	Damour. J. C. S. 44, 719.
Didymium orthoborate	$Di B O_3$	5.680 } 15°	Cleve. U. N. A. 1885.
" "	"	5.721 }	
Didymium borate	$Di_4 B_2 O_9$	5.825, 14°	Nordenskiöld. J. 14, 197.
Samarium orthoborate	$Sm B O_3$	6.045 } 16°.4	Cleve. U. N. A. 1885.
" "	"	6.052 }	
Ulexite	$Na Ca B_5 O_9 . 6 H_2 O$	1.65	How. A. J. S. (2), 24, 234.
Franklandite	$Na_4 Ca_2 B_{12} O_{22} . 15 H_2 O$.	1.65	Reynolds. J. 30, 1288.
Hydroboracite	$Mg_3 Ca_3 B_{16} O_{30} . 18 H_2 O$.	1.9	Hess. P. A. 31, 49.
Sussexite	$Mg Mn B_2 O_5 . H_2 O$	3.42	Brush. A. J. S. (2), 46, 240.
Magnesium chromium borate.	$Mg_6 Cr_6 B_4 O_{21}$	3.82	Ebelmen. J. 4, 13.
Magnesium iron borate	$Mg_6 Fe_6 B_4 O_{21}$	3.85	" "
Ludwigite	$Mg_6 Fe'''_4 Fe''_2 H_3 B_3 O_{20}$.	3.907	Tschermak. J. 27, 1278.
"		4.016	
Rhodizite	$Al_2 K B_3 O_8$	3.38	Damour. J. 37, 1927.
Boracite	$Mg_7 B_{16} O_{30} Cl_2$	2.9134	Karsten. J. 1, 1227.
"	"	2.974	Mobs. See Böttger.

XXX. NITRATES.

1st. Simple Nitrates.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen nitrate, or nitric acid.	$H N O_3$	1.5543, 15°.5	Kirwan. Gilb. Ann. 9, 266.
" " "	"	1.522, 12°.5	Mitscherlich. P. A. 18, 152.
" " "	"	1.503	A. Smith. J. 1, 386.
" " "	"	1.552, 15°	Millon. J. P. C. 29, 337.
" " "	$H N O_3 . H_2 O$	1.486	A. Smith. J. 1, 386.
" " "	$H N O_3 . 3 H_2 O$	1.424	" "
Nitric subhydrate	$2 H N O_3 . N_2 O_5$	1.642, 18°	Weber. J. P. C. (2), 6, 357.

Name.	Formula.	Sp. Gravity.	Authority.
Lithium nitrate	$Li\ N\ O_3$	2.334	Kremers. J. 10, 67.
" "	"	2.442	Troost. J. 10, 141.
Sodium nitrate	$Na\ N\ O_3$	2.0964	Hassenfratz. Ann. 28, 3.
" "	"	2.096	Klaproth.
" "	"	2.1880	Marx. See Böttger.
" "	"	2.2256	Karsten. Schw. J. 65, 394.
" "	"	2.200	Kopp. A.C.P. 36, 1.
" "	"	2.182, m. of 4	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.2606, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	2.26	Filhol. Ann. (3), 21, 415.
" "	"	2.256	Schröder. P. A. 106, 226.
" "	"	2.265	Buignet. J. 14, 15.
" "	"	2.236	Kopp. J. 16, 4.
" "	"	2.246, 15°.5	Holker. P. M. (3), 27, 213.
" "	"	2.24	Page and Keightley. J. C. S. (2), 10, 566.
	"	2.25	
" "	"	2.148	W. C. Smith. Am. J. P. 53, 148.
" " Native	"	2.18, 15°.5	Forbes. P. M. (4), 32, 135.
" " "	"	2.290	Hayes.
" "	"	1.878, at the melting p't.	Melts 314°. Braun. P. A. 154, 190.
" "	"	2.24	Brügelmann. Ber. 17, 2359.
" "	$Na\ N\ O_3.\ 7\ H_2\ O$	1.357, 0°, l.	Ditte. B. S. C. 24, 366.
Potassium nitrate	$K\ N\ O_3$	1.9369	Hassenfratz. Ann. 28, 3.
" "	"	1.933	Wattson.
" "	"	2.1006	Karsten. Schw. J. 65, 394.
" "	"	2.058	Kopp. A. C. P. 36, 1.
" "	"	2.070, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.1078, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	2.10657, 4°	
" "	"	2.09584, 4°	
" " Large crystals.	"	2.109	Grassi. J. 1, 39.
" " Small crystals.	"	2.143	
" " After fusion.	"	2.132	
" "	"	2.100	Schiff. A. C. P. 112, 88.
" "	"	2.086	Schröder. P. A. 106, 226.
" "	"	2.126	Buignet. J. 14, 15.
" "	"	2.105	Kopp. J. 16, 4.

Name.	Formula.	Sp. Gravity.	Authority.
Potassium nitrate	$K N O_3$	2.074, 15°.5	Holker. P. M. (3), 27, 213.
" "	"	2.0845	Stolba. J. P. C. 97, 503.
" "	"	2.0904	
" "	"	2.059, 0°	Quincke. P. A. 135, 642.
" "	"	2.06	Page and Keightley. J. C. S. (2), 10, 566.
" "	"	2.10355, cryst. at 20°.	Nicol. P. M. (5), 15, 94.
" "	"	2.09916, cryst. at 110°.	
" "	"	1.702, at the melting p't.	Braun. (Melts at 342°.) P. A. 154, 190.
Ammonium nitrate	$Am N O_3$	1.579	Hassenfratz. Ann. 28, 3.
" "	"	1.707	Kopp. A. C. P. 36, 1.
" "	"	1.635, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.737, m. of 2	Schröder. P. A. 106, 226.
" "	"	1.709	Schiff. A. C. P. 112, 88.
" "	"	1.723	Buignet. J. 14, 15.
" "	"	1.6915	Stolba. J. P. C. 97, 503.
Silver nitrate	$Ag N O_3$	4.3554	Karsten. Schw. J. 65, 394.
" "	"	4.336	Playfair and Joule. M. C. S. 2, 401.
" "	"	4.238	Schröder. P. A. 107, 113.
" "	"	4.253	
" "	"	4.271	
" "	"	4.328	
Thallium nitrate	$Tl N O_3$	5.8	Lamy. J. 15, 186.
" "	"	5.55	Lamy and Des Cloizeaux. Nature 1, 116.
Magnesium nitrate	$Mg (N O_3)_2 . 6 H_2 O$	1.464	Playfair and Joule. M. C. S. 2, 401.
Zinc nitrate	$Zn (N O_3)_2 . 6 H_2 O$	2.063, 13°	Laws. F. W. C.
" "	"	2.067, 15°	
Cadmium nitrate	$Cd (N O_3)_2 . 4 H_2 O$	2.450, 14°	" "
" "	"	2.460, 20°	
Mercurous nitrate	$Hg N O_3 . H_2 O$	4.785, m. of 3	Playfair and Joule. M. C. S. 2, 401.
Calcium nitrate	$Ca (N O_3)_2$	2.240	Filhol. Ann. (3), 21, 415.
" "	"	2.472	Kremers. J. 10, 67.
" "	"	2.504, 17°.9	Favre and Valson. C. R. 77, 579.
" "	$Ca (N O_3)_2 . 4 H_2 O$	1.78	Filhol. Ann. (3), 21, 415.
" "	"	1.90, 15°.5, s.	Ordway. J. 12, 115.
" "	"	1.79, 15°.5, l.	
" "	"	1.878, 18°	Favre and Valson. C. R. 77, 579.

Name.	Formula.	Sp. Gravity.	Authority.
Strontium nitrate	$Sr(NO_3)_2$	3.0061	Hassenfratz. Ann. 28, 3.
" "	"	2.8901	Karsten. Schw. J. 65, 394.
" "	"	2.704	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.857	Filhol. Ann. (3), 21, 415.
" "	"	2.962, m. of 4	Schröder. P. A. 106, 226.
" "	"	2.805	Buignet. J. 14, 15.
" "	"	2.980, 16°.8	Favre and Valson. C. R. 77, 579.
" "	$Sr(NO_3)_2 . 4H_2O$	2.113	Filhol. Ann. (3), 21, 415.
" "	"	2.249, 15°.5	Favre and Valson. C. R. 77, 579.
Barium nitrate	$Ba(NO_3)_2$	2.9149	Hassenfratz. Ann. 28, 3.
" "	"	3.1848	Karsten. Schw. J. 65, 394.
" "	"	3.284, m. of 5	Playfair and Joule. M. C. S. 2, 401.
" "	"	3.16052, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	3.200	Filhol. Ann. (3), 21, 415.
" "	"	3.222	Crystallized at different temperatures. Kremers. J. 5, 15.
" "	"	3.228	
" "	"	3.240	
" "	"	3.242	
" "	"	3.208	Schröder. P. A. 106, 226.
" "	"	3.241	
" "	"	3.404	Buignet. J. 14, 15.
" "	"	3.22	Brügelmann. Ber. 17, 2359.
Lead nitrate	$Pb(NO_3)_2$	4.068	Hassenfratz. Ann. 28, 3.
" "	"	4.769	Breithaupt. Schw. J. 68, 291.
" "	"	4.3993	Karsten. Schw. J. 65, 394.
" "	"	4.340	Kopp.
" "	"	4.316, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" "	"	4.472, 4°	Playfair and Joule. J. C. S. 1, 137.
" "	"	4.581	Filhol. Ann. (3). 21, 415.
" "	"	4.41, 15°.5	Holker. P. M. (3), 27, 214.
" "	"	4.423	Schröder. P. A. 106, 226.
" "	"	4.429	
" "	"	4.509	
" "	"	4.235	Buignet. J. 14, 15.
" "	"	4.3, 0°	Ditte. Ber. 15, 1438.
Manganese nitrate	$Mn(NO_3)_2 . 6H_2O$	1.8199, 21°, s.	Ordway. J. 12, 113.
" "	"	1.8104, 21°, l.	

Name.	Formula.	Sp. Gravity.	Authority.
Nickel nitrate	$Ni(NO_3)_2 . 6H_2O$	2.037, 22°	Laws. F. W. C.
" "	"	2.065, 14°	
Cobalt nitrate	$Co(NO_3)_2 . 6H_2O$	1.83, 14°	Bödeker. B. D. Z.
Copper nitrate	$Cu(NO_3)_2 . 3H_2O$	2.174	Hassenfratz. Ann. 28, 3.
" "	"	2.047, m. of 3.	Playfair and Joule. M. C. S. 2, 401.
Didymium nitrate	$Di(NO_3)_3 . 6H_2O$	2.245, 19°	Cleve. U. N. A. 1885.
" "	"	2.258, 19°	
Samarium nitrate	$Sm(NO_3)_3 . 6H_2O$	2.370, 20°.4	" "
" "	"	2.380, 20°.4	
Ferric nitrate	$Fe_2(NO_3)_6 . 18H_2O$	1.6835, 21°, s.	Ordway. J. 12, 114.
" "	"	1.6712, l.	
Bismuth nitrate	$Bi(NO_3)_3 . 5H_2O$	2.736, m. of 2.	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.828, 13°	Laws. F. W. C.
Uranyl nitrate	$UO_2(NO_3)_2 . 6H_2O$	2.807, 13°	Bödeker. B. D. Z.
Gold hydrogen nitrate	$AuH(NO_3)_4 . 3H_2O$	2.82, 19°	Gumpach. See Schottlander, Wurzburg In. Diss. 1884.
" " "	"	2.87, 19°	

2d. Basic and Ammonio-Nitrates.

Name.	Formula.	Sp. Gravity.	Authority.
Dimercuric nitrate	$Hg_2N_2O_7 . 2H_2O$	4.242	Playfair and Joule. M. C. S. 2, 401.
Mercurous subnitrate	$Hg_6(NO_3)_4O . . 3H_2O$	5.967	" "
Lead hydroxynitrate	$PbNO_3OH$	5.93, 0°	Ditte. Ber. 15, 1438.
Diplumbic nitrate	$Pb_2N_2O_7$	5.645	Playfair and Joule. M. C. S. 2, 401.
Tricupric nitrate	$Cu_3N_2O_8 . H_2O$	2.765, m. of 3.	" "
Tetracupric nitrate	$Cu_4N_2O_9 . 3H_2O$	3.378	Wells and Penfield. A. J. S. (3), 30, 50.
" "	"	3.371	
Gerhardtite	"	3.426	
Bismuth subnitrate	$Bi_2N_2O_8 . H_2O$	4.551	Playfair and Joule. M. C. S. 2, 401.
Bismuth hydroxynitrate	$Bi(OH)_2NO_3$	5.260, m. of 2.	" "
Mercury ammonionitrate	$Hg_3N_2O_8 . 2NH_3$	5.970	" "
Copper ammonionitrate	$Cu(NO_3)_2 . 4NH_3$	1.874, m. of 3.	" "
" "	"	1.905, 21°.5	Evans. F. W. C.
Purpureocobalt chloronitrate.	$Co_2(NH_3)_{10}Cl_2(NO_3)_4$	1.667, 16°	Jörgensen. J. P. C. (2), 20, 105.
Purpureocobalt bromonitrate.	$Co_2(NH_3)_{10}Br_2(NO_3)_4$	1.956, 17°.1	Jörgensen. J. P. C. (2), 19, 49.
Purpureochromium chloronitrate.	$Cr_2(NH_3)_{10}Cl_2(NO_3)_4$	1.569, 17°.2	Jörgensen. J. P. C. (2), 20, 105.

XXXI. HYPOPHOSPHITES AND PHOSPHITES.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen hypophosphite, or hypophosphorous acid	$H_3 P O_2$	1.493, 18°.8	Thomsen. J. P. C. (2), 2, 160.
Barium hypophosphite	$Ba H_4 P_2 O_4 . H_2 O$	2.8718, 10°	Mohr. F. W. C.
" "	"	2.8971, 17°	
" "	"	2.839	Schröder. Ber. 11, 2130.
" "	"	2.911	
" "	"	2.775, 23°.3	Nye. F. W. C.
" "	"	2.780, 21°.6	
Magnesium hypophosphite	$Mg H_4 P_2 O_4 . 6 H_2 O$	1.5681, 14°.5	Mohr. F. W. C.
" "	"	1.5886, 12°.5	
Zinc hypophosphite	$Zn H_4 P_2 O_4 . 6 H_2 O$	2.014, 19°.5	Nye. F. W. C.
" "	"	2.016, 19°.2	
" "	"	2.020, 20°	
Nickel hypophosphite	$Ni H_4 P_2 O_4 . 6 H_2 O$	1.824, 19°.8	" "
" "	"	1.844, 19°	
" "	"	1.856, 18°	
Cobalt hypophosphite	$Co H_4 P_2 O_4 . 6 H_2 O$	1.808	" "
" "	"	1.809, 18°.5	
" "	"	1.811	
Hydrogen phosphite, or phosphorous acid.	$H_3 P O_3$	1.651, 21°.2	Thomsen. J. P. C. (2), 2, 160.

XXXII. HYPOPHOSPHATES.

Name.	Formula.	Sp. Gravity.	Authority.
Tetrasodium hypophosphate.	$Na_4 P_2 O_6 . 10 H_2 O$	1.832	Dufet. C. R. 102, 1328.
" "	"	1.8233	Dufet. B. S. M. 10, 77.
Trisodium hypophosphate	$Na_3 H P_2 O_6 . 9 H_2 O$	1.7427	" "
Disodium hypophosphate	$Na_2 H_2 P_2 O_6 . 6 H_2 O$	1.8491	" "
" "	"	1.840	Dufet. C. R. 102, 1328.

XXXIII. PHOSPHATES.

1st. Normal Orthophosphates.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen phosphate, or phosphoric acid.	H_3PO_4	1.88	Schiff. J. 12, 41.
" "	"	1.884, 18°.2	Thomsen. J. P. C. (2), 2, 160.
Trisodium phosphate	Na_3PO_4	2.5111, 12°	C. A. Mohr. F. W. C.
" "	"	2.5362, 17°.5	
" "	$Na_3PO_4 . 12 H_2O$	1.622	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.618	Schiff. A. C. P. 112, 88.
" "	"	1.6645	Dufet. B. S. M. 10, 77.
Disodium hydrogen phosphate.	$Na_2HPO_4 . 8 H_2O$	1.848	Dufet. C. R. 102, 1328.
" " "	$Na_2HPO_4 . 7 H_2O$	1.6789	Dufet. B. S. M. 10, 77.
" " "	$Na_2HPO_4 . 12 H_2O$	1.5139	Tünnermann. See Böttger.
" " "	"	1.525, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.586, 8°	Kopp. J. 8, 45.
" " "	"	1.525	Schiff. A. C. P. 112, 88.
" " "	"	1.550	Buignet. J. 14. 15.
" " "	"	1.5235, 15°	Stolba. J. P. C. 97, 503.
" " "	"	1.535	W. C. Smith. Am. J. P. 53, 148.
" " "	"	1.5313	Dufet. B. S. M. 10, 77.
Sodium dihydrogen phosphate.	$NaH_2PO_4 . H_2O$	2.040	Schiff. A. C. P. 112, 88.
" " "	"	2.0547	Dufet. B. S. M. 10, 77.
" " "	$NaH_2PO_4 . 2 H_2O$	1.915	Joly and Dufet. C. R. 102, 1393.
" " "	"	1.9096	Dufet. B. S. M. 10, 77.
Potassium dihydrogen phosphate.	KH_2PO_4	2.298	Schiff. A. C. P. 112, 88.
" " "	"	2.403	Buignet. J. 14, 15.
" " "	"	3.321	Schröder. Dm. 1873.
" " "	"	2.323	
" " "	"	2.343	
" " "	"	2.380	
Diammonium hydrogen phosphate.	Am_2HPO_4	1.619	Schiff. A. C. P. 112, 88.
" " "	"	1.678	Buignet. J. 14, 15.
Ammonium dihydrogen phosphate.	AmH_2PO_4	1.758	Schiff. A. C. P. 112, 88.
" " "	"	1.700	Schröder. Dm. 1873.

Name.	Formula.	Sp. Gravity.	Authority.
Ammonium dihydrogen phosphate.	$Am\ H_2 P O_4$	1.779	Schröder. Ber. 7, 677.
Sodium potassium hydrogen phosphate.	$Na K H P O_4 . 7 H_2 O$	1.671	Schiff. A. C. P. 112, 88.
Sodium ammonium hydrogen phosphate.	$Na Am HPO_4 . 4 H_2 O$	1.554	" "
Trisilver phosphate	$Ag_3 P O_4$	7.821	Stromeyer. See Böttger.
Thallium dihydrogen phosphate.	$Tl H_2 P O_4$	4.723	Lamy and Des Cloizeaux. Nature 1, 116.
Trithallium phosphate	$Tl_3 P O_4$	6.89, 10°	Lamy. J. 18, 247.
Bobierrite	$Mg_3 (P O_4)_2 . 8 H_2 O$	2.41	Lacroix. C. R. 106, 632.
Magnesium hydrogen phosphate.	$Mg H P O_4 . H_2 O$	2.326, 15°	Schulten. C. R. 100, 877.
Struvite	$Am Mg P O_4 . 6 H_2 O$	1.65	Teschemacher. P. M. (3), 28, 548.
Hannayite	$Am_2 Mg_3 H_4 (P O_4)_4 . 8 H_2 O$	1.893	v. Rath. B. S. M. 2, 80.
Hopeite	$Zn_3 (P O_4)_2 . 4 H_2 O$	2.76—2.85	Dana's Mineralogy.
Brushite	$Ca H P O_4 . 2 H_2 O$	2.208	Moore. A. J. S. (2), 39, 43.
Metabrushite	$2 Ca H P O_4 . 3 H_2 O$	2.288, 15°.5	Julien. A. J. S. (2), 40, 371.
"	"	2.356, 15°.5	"
"	"	2.362, 15°.5	"
Martinite	$Ca_{10} H_4 (P O_4)_8 . H_2 O$	2.892—2.896	Kloos. J. C. S. 54, 233.
Reddingite	$Mn_3 (P O_4)_2 . 3 H_2 O$	3.102	Brush and Dana. A. J. S. (3), 16, 120.
Vivianite	$Fe_3 (P O_4)_2 . 8 H_2 O$	2.58, 15°	Rammelsberg. P. A. 64, 411.
"	"	2.680	Rammelsberg. J. P. C. 86, 344.
Lithiophilite	$Mn Li P O_4$	3.482	Brush and Dana. A. J. S. (3), 18, 45.
Triphylite	$Fe Li P O_4$	3.6	Fuchs. B. J. 15, 211.
"	"	3.534—3.589	Penfield. A. J. S. (3), 17, 226.
Hureaulite	$Mn_{10} Fe_2 H_8 (P O_4)_8 . 5 H_2 O$	3.185—3.198	Des Cloizeaux. Ann. (3), 53, 300.
Fairfieldite	$MnCa_2(PO_4)_2 . 2H_2O$	3.15	Brush and Dana. A. J. S. (3), 17, 359.
Dickinsonite	$NaCaFeMn_2(PO_4)_3 . H_2 O$	3.338	Brush and Dana. A. J. S. (3), 16, 114.
"	"	3.343	"
Fillowite	$Na_2CaFeMn_6(PO_4)_6 . H_2 O$	3.43	Brush and Dana. A. J. S. (3), 17, 363.
Strengite	$Fe''' P O_4 . 2 H_2 O$	2.87	Nies. Z. K. M. 1, 94.
" Artificial	"	2.74	Schulten. Z. K. M. 12, 640.
Koninckite	$Fe''' P O_4 . 3 H_2 O$	2.3	Cesaro. A. J. S. (3), 29, 342.
Aluminum phosphate. Cryst.	$Al P O_4$	2.59	Schulten. C. R. 98, 1584.
Berlinite	$4 Al P O_4 . H_2 O$	2.64	Blomstrand. Dana's Min.
Callainite. (Variscite?)	$2 Al P O_4 . 5 H_2 O$	2.50	Damour. C. R. 59, 936.
" "	"	2.52	"

Name.	Formula.	Sp. Gravity.	Authority.
Variscite	$Al\ P\ O_4.\ 2\ H_2\ O$	2.408, 18°	Petersen. N. J. 1871, 357.
Zepharovichite	$Al\ P\ O_4.\ 3\ H_2\ O$	2.384	Boricky. J. 22, 1235.
Xenotime	$Y\ P\ O_4$	4.54	Smith. J. 7, 857.
"	"	4.45	Zchau. J. 8, 966.
"	"	4.51	Zchau. J. 8, 966.
"	"	4.39	Damour. J. 10, 686.
Cerium phosphate	$Ce\ P\ O_4$	5.22, 14°	Grandeau. Ann. (6), 8, 193.
Cryptolite	"	4.6	Wöhler. P. A. 67, 424.
"	"	4.78	Watts. J. 2, 773.
Rhabdophane (Scovillite)	$2\ (La\ Di\ Y\ Er)\ P\ O_4.\ H_2\ O.$	3.9—4.01	Brush and Penfield. A. J. S. (3), 25, 459.
Monazite	$(Ce\ La\ Di)\ P\ O_4$	5.203	Genth. Dana's Min.
"	"	5.174	Rammelsberg. J. 30, 1298.
"	"	5.106—5.110	Kokscharow. J. 15, 762.
"	"	5.174	Rammelsberg. Z. G. S. 29, 79.
Didymium phosphate	$Di\ P\ O_4$	5.84, 15°	Grandeau. Ann. (6), 8, 193.
Samarium phosphate	$Sm\ P\ O_4$	5.826, 17°.5	Cleve. U. N. A. 1885.
" "	"	5.830, 17°.5	Cleve. U. N. A. 1885.
Autunite	$Ca\ (U\ O_2)_2\ (P\ O_4)_2.\ 8\ H_2\ O.$	3.05—3.19	Dana's Mineralogy.
Torbernite	$Cu\ (U\ O_2)_2\ (P\ O_4)_2.\ 8\ H_2\ O.$	3.4—3.6	" "
Uranocircite	$Ba\ (U\ O_2)_2\ (P\ O_4)_2.\ 8\ H_2\ O.$	3.53	Weisbach. J. 30, 1303.
Sodium zirconium phosphate.	$Na_8\ Zr\ (P\ O_4)_4$	2.43, 14°	Troost and Ouvrard. C. R. 105, 30.
" " "	$Na_{12}\ Zr_3\ (P\ O_4)_8$	2.88, 14°	" "
" " "	$Na\ Zr_2\ (P\ O_4)_3$	3.10, 12°	" "
Potassium zirconium phosphate.	$K_2\ Zr\ (P\ O_4)_2$	3.076, 7°	Troost and Ouvrard. C. R. 102, 1422.
" "	$K\ Zr_2\ (P\ O_4)_3$	3.18, 12°	" "
Sodium thorium phosphate.	$Na_5\ Th\ (P\ O_4)_3$	3.843, 7°	Troost and Ouvrard. C. R. 105, 30.
" " "	$Na\ Th_2\ (P\ O_4)_3$	5.62, 16°	" "
Potassium thorium phosphate.	$K_{12}\ Th_3\ (P\ O_4)_8$	3.95, 12°	Troost and Ouvrard. C. R. 102, 1422.
" " "	$K_2\ Th\ (P\ O_4)_2$	4.688, 7°	" "
" " "	$K\ Th_2\ (P\ O_4)_3$	5.75, 12°	" "

2d. Basic Orthophosphates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isoclasite	$Ca_2(OH)PO_4 . 2H_2O$	2.92	Sandberger. J. P. C. (2), 2, 125.
Libethenite	$Cu_2(OH)PO_4$	3.6—3.8	Hermann. J. P. C. 37, 175.
Tagilite	$Cu_2(OH)PO_4 . H_2O$	3.50	Hermann. J. P. C. 37, 184.
"	"	4.076	Breithaupt. B. H. Ztg. 24, 309.
Veszelyite	$Cu_2(OH)PO_4 . 2H_2O$	3.531	Schrauf. Z. K. M. 4, 31.
Pseudomalachite	$Cu_3(OH)_3PO_4$	4.175	Schrauf. Z. K. M. 4, 14.
Ehlite	$Cu_5(OH)_4(PO_4)_2 . H_2O$	4.102	Schrauf. Z. K. M. 4, 13.
Dihydrite	$Cu_5(OH)_4(PO_4)_2$	4.309	Schrauf. Z. K. M. 4, 12.
Triploidite	$(MnFe)_2(OH)PO_4$	3.697	Brush and Dana. A. J. S. (3), 16, 42.
Ludlamite	$Fe_7(OH)_2(PO_4)_4 . 8H_2O$	3.12	Maskelyne and Field. J. 30, 1300.
Picite	$Fe_{14}(OH)_{18}(PO_4)_8 . 27H_2O$	2.83	Streng. J. 34, 1377.
Dufrenite	$Fe'''_2(OH)_3PO_4$	3.227	Dufrenoy. Dana's Min.
"	"	3.382	Campbell. A. J. S. (3), 22, 65.
"	"	3.454	Massie. J. 33, 1433.
"	"	3.293	Boricky. S. W. A. 56 (1), 7.
Cacoxenite	$Fe'''_4(OH)_6(PO_4)_2 . 9H_2O$	3.38	Dana's Mineralogy.
Calcioferrite	$Fe'''_3Ca_3(OH)_3(PO_4)_4 . 8H_2O$	2.523	Reissig. Dana's Min.
"		2.529	
Borickite	$Fe'''_5Ca(OH)_{11}(PO_4)_2 . 3H_2O$	2.696—2.707	Boricky. J. 20, 1002.
Chalcosiderite	$Fe'''_6Cu(OH)_8(PO_4)_4 . 4H_2O$	3.108	Maskelyne. J. C. S. 28, 586.
Andrewsite	$Fe'''_8CuFe''_4(PO_4)_8(OH)_6$	3.475	" "
Evansite	$Al_3(OH)_6PO_4 . 6H_2O$	1.939	Forbes. P. M. (4), 28, 341.
Trolleite	$Al_4(OH)_3(PO_4)_3$	3.10	Blomstrand. Dana's Min.
Augelite	$Al_4(OH)_6(PO_4)_2$	2.77	" "
Turquois	$Al_4(OH)_6(PO_4)_2 . H_2O$	2.621	Hermann. J. P. C. 33, 282.
"	"	2.426—2.651	Blake. J. 11, 722.
Peganite	$Al_4(OH)_6(PO_4)_2 . 3H_2O$	2.492—2.496	Breithaupt. Schw. J. 60, 308.
Fischerite	$Al_4(OH)_6(PO_4)_2 . 5H_2O$	2.46	Hermann. J. P. C. 33, 286.
Cæruleolactite	$Al_6(OH)_6(PO_4)_4 . 7H_2O$	2.552, 19°	Petersen. N. J. 1871, 353.
		2.593, 18°	

Name.	Formula.	Sp. Gravity.	Authority.
Wavellite	$Al_6 (O H)_6 (P O_4)_4 . 9 H_2 O$.	2.337	Haidinger. Dana's Min.
"	"	2.316	Richardson. Dana's Min.
Planerite	$Al_6 (O H)_6 (P O_4)_4 . 12 H_2 O$.	2.65	Hermann. J. 15, 764.
Sphærite	$Al_{10} (O H)_{18} (P O_4)_4 . 7 H_2 O$.	2.536	Zepharovich. S. W. A. 56, 24.
Lazulite	$Al_2 Mg (OH)_2 (PO_4)_2$	3.122	Smith and Brush. J. 6, 840.
"	"	3.106—3.123	Rammelsberg. P. A. 64, 261.
"	"	3.108	Chapman. J. 14, 1083.
Cirrolite	$Al_2 Ca_3 (O H)_3 (P O_4)_3$	3.08	Blomstrand. Dana's Min.
Plumbogummite	$Al_4 Pb (O H)_8 (PO_4)_2 . 5 H_2 O$.	4.88, 15°.6	Dufrenoy. Ann. (2), 59, 440.
" Hitchcockite	"	4.014, 20°	Genth. A. J. S. (2), 28, 424.
Eosphorite	$Al Mn (O H)_2 P O_4 . H_2 O$.	3.124	Brush and Dana. A. J. S. (3), 16, 35.
"		3.134	
"	"	3.145	
Childrenite	$Al Fe (O H)_2 P O_4 . H_2 O$.	3.22	Church. J. C. S. 26, 104.
Barrandite	$Al Fe''' (P O_4)_2 . 4 H_2 O$.	2.576	Zepharovich. J. 20, 1000.

3d. Meta- and Pyrophosphates.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium metaphosphate	$Na P O_3$	2.4756, 19°.5	Mohr. F. W. C.
" "	"	2.4769, 18°	
" "	"	2.503, 20°	Bedson and Williams. Ber. 14, 2555.
Potassium metaphosphate	$K P O_3$	2.2513 14°.5	Mohr. F. W. C.
" "	"	2.2639	
Didymium metaphosphate	$Di P_5 O_{14}$	3.333 18°.4	Cleve. U. N. A. 1885.
" "	"	3.358	
Samarium metaphosphate	$Sm P_5 O_{14}$	3.485 28°.8	" "
" "	"	3.489	
Thorium metaphosphate	$Th P_4 O_{12}$	4.08, 16°.4	Troost. C. R. 101, 210.
Sodium pyrophosphate	$Na_4 P_2 O_7$	2.534	Schröder. Dm. 1873.
" "	"	2.3613 17°	Mohr. F. W. C.
" "	"	2.3851	
" "	$Na_4 P_2 O_7 . 10 H_2 O$	1.836	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.7726, 21°	Mohr. F. W. C.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium pyrophosphate	$Na_4 P_2 O_7 . 10 H_2 O$	1.824	Dufet. C. R. 102, 1328.
" "	"	1.8151	Dufet. B. S. M. 10, 77.
Sodium hydrogen pyrophosphate.	$Na_2 H_2 P_2 O_7 . 6 H_2 O$	1.8616	" "
Potassium pyrophosphate	$K_4 P_2 O_7$	2.33	Brügelmann. Ber. 17, 2359.
Silver pyrophosphate	$Ag_4 P_2 O_7$	5.306	Stromeyer. See Böttger.
" "	"	5.2596	Tünnermann. See Böttger.
Thallium pyrophosphate	$Tl_4 P_2 O_7$	6.786	Lamy and Des Cloizeaux. Nature 1, 116.
Magnesium pyrophosphate	$Mg_2 P_2 O_7$	2.220	Schröder. Dm. 1878.
" "	"	2.559, 18°	Lewis. F. W. C.
" "	"	2.598, 22°	
Zinc pyrophosphate	$Zn_2 P_2 O_7$	3.7538 } 23°	" "
" "	"	3.7574	
Manganese pyrophosphate	$Mn_2 P_2 O_7$	3.5742, 26°	" "
" "	"	3.5847, 20°	
Nickel pyrophosphate	$Ni_2 P_2 O_7$	3.9064, 27°	" "
" "	"	3.9308, 25°	
Cobalt pyrophosphate	$Co_2 P_2 O_7$	3.710, 25°	" "
" "	"	3.746, 23°	
Barium pyrophosphate	$Ba_2 P_2 O_7 . H_2 O$	3.574	Schröder. Dm. 1878.
" "	"	3.582	
" "	"	3.590	
Silicon pyrophosphate	$Si P_2 O_7$	3.1, 14°	Hautefeuille and Margottet. C. R. 96, 1053.
Zirconium pyrophosphate	$Zr P_2 O_7$	3.12	Knop. A. C. P. 159, 48.
" "	"	3.14	
Tin pyrophosphate	$Sn P_2 O_7$	3.61	Knop. A. C. P. 159, 39.
Basic tin pyrophosphate	$Sn_2 (P_2 O_7) O_2$	3.87	" "
" " "	"	3.98	
Basic titanium pyrophosphate.	$Ti_3 (P_2 O_7) O_4$	2.9	Knop. A. C. P. 157, 365.

XXXIV. VANADATES.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium octovanadate	$Na_{12}V_8O_{26}.4H_2O$	2.85, 18°	Carnelley. J. C. S. (2), 11, 823.
Silver octovanadate	$Ag_{12}V_8O_{26}$	5.67, 18°	" "
Thallium metavanadate	$TlVO_3$	6.019, 11°	" "
Thallium pyrovanadate	$Tl_4V_2O_7$	8.21, 18°.5, ppt.	" "
" "	"	8.812, 18°.5, fused.	
Thallium orthovanadate	Tl_3VO_4	8.6, 17°	" "
Thallium octovanadate	$Tl_{12}V_8O_{26}$	8.59, 17°.5	" "
Thallium decavanadate	$Tl_{12}V_{10}O_{31}$	7.86, 17°	" "
Magnesium vanadate. Brown.	$Mg_3V_{10}O_{28}.28H_2O$	2.199, 18°	Sugiura and Baker. J. C. S. 35, 716.
" " Red	"	2.167, 18°	
Pucherite	$BiVO_4$	5.91	Frenzel. J. P. C. (2), 4, 227.
Dechenite	$Pb_3V_2O_8.Zn_3V_2O_8$	5.81	Bergemann. J. 3, 758.
"	"	5.83	Tschermak. J. 14, 1021.
" Eusynchite	"	5.596	Rammelsberg.
Descloizite	$PbZn(OH)VO_4$	5.839	Damour. J. 7, 855.
"	"	5.915	From two samples. Rammelsberg. J. 33, 1428.
"	"	6.080	
"	"	6.200	Penfield.* A. J. S. (3), 26, 361.
"	"	6.205	
" Light	"	6.105—6.108	Genth. Am. Phil. Soc. 1885.
" Dark	"	5.814—5.882	
Mottramite†	$PbCu(OH)VO_4$	5.894	Roscoe. J. 29, 1259.
Volborthite‡	$R_3(OH)_3VO_4.6H_2O$	3.55	Credner. Dana's Min.
Didymium vanadate	$DiVO_4$	4.959, 21°.2	Cleve. U. N. A. 1885.
" "	"	4.963, 21°.2	
Didymium metavanadate	$DiV_5O_{14}.14H_2O$	2.492, 18°.5	" "
" "	"	2.497, 18°.5	
Samarium metavanadate	$SmV_5O_{14}.12H_2O$	2.628, 17°.5	" "
" "	"	2.620, 17°.8	
" "	$SmV_5O_{14}.14H_2O$	2.52°, 17°.5	" "
" "	"	2.526, 17°.8	
Sodium vanadium vanadate.	$2Na_2O.2V_2O_4.V_2O_5.6H_2O$	1.389, 15°	Brierly. J. C. S. 49, 30.
" " "	$2Na_2O.2V_2O_4.V_2O_5.18H_2O$	1.327, 15°	" "
Potassium vanadium vanadate.	$5K_2O.2V_2O_4.4V_2O_5.H_2O$	1.213, 15°	" "
Ammonium vanadium vanadate.	$3Am_2O.2V_2O_4.4V_2O_5.6H_2O$	1.335, 15°	" "

* Penfield's mineral contained some copper and arsenic. Frenzel's tritochorite (G. 6.25) is similar.
† Formula somewhat doubtful.
‡ R in this formula = ¾ Cu and ¼ Ca + Ba.

XXXV. ARSENITES AND ARSENATES.

1st. Normal Orthoarsenates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium dihydrogen arsenate.	$Na H_2 As O_4 . H_2 O$	2.535	Schiff. A. C. P. 112, 88.
" " "	"	2.6700	Dufet. B. S. M. 10, 77.
" " "	$Na H_2 As O_4 . 2 H_2 O$	2.320	Joly and Dufet. C. R. 102, 1898.
" " "	"	2.3093	Dufet. B. S. M. 10, 77.
Disodium hydrogen arsenate.	$Na_2 H As O_4 . 7 H_2 O$	1.871	Schiff. A. C. P. 112, 88.
" " "	"	1.8825	Dufet. B. S. M. 10, 77.
" " "	$Na_2 H As O_4 . 12 H_2 O$	1.759	Thomson. See Böttger.
" " "	"	1.736	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.670	Schiff. A. C. P. 112, 88.
" " "	"	1.6675	Dufet. B. S. M. 10, 77.
Trisodium arsenate	$Na_3 As O_4$	2.8128 } 21°	Stallo. F. W. C.
" "	"	2.8577 } 21°	Stallo. F. W. C.
" "	$Na_3 As O_4 . 12 H_2 O$	1.804	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.762	Schiff. A. C. P. 112, 88.
" "	"	1.7593	Dufet. B. S. M. 10, 77.
Potassium dihydrogen arsenate.	$K H_2 As O_4$	2.638	Thomson. See Böttger.
" " "	"	2.832	Schiff. A. C. P. 112, 88.
" " "	"	2.844	Schröder. Dm. 1873.
" " "	"	2.853	Schröder. Dm. 1873.
" " "	"	2.855	Schröder. Dm. 1873.
" " "	"	2.862	Topsoë. B. S. C. 19, 246.
Ammonium dihydrogen arsenate.	$Am H_2 As O_4$	2.249	Schiff. A. C. P. 112, 88.
" "	"	2.299	Schröder. Dm. 1873.
" "	"	2.309	Schröder. Dm. 1873.
" "	"	2.312	Schröder. Dm. 1873.
" "	"	2.308	Topsoë. C. C. 4, 76.
Diammonium hydrogen arsenate.	$Am_2 H As O_4$	1.989	Schiff. A. C. P. 112, 88.
Potassium sodium hydrogen arsenate.	$K Na H As O_4 . 7 H_2 O$	1.884	Schiff. A. C. P. 112, 88.
Ammonium sodium hydrogen arsenate.	$Am Na H As O_4 . 4 H_2 O$	1.838	" "
Hoernesite	$Mg_3 (As O_4)_2 . 8 H_2 O$	2.474	Haidinger. J. 13, 784.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Magnesium hydrogen arsenate.	$(H\,Mg\,As\,O_4)_2 . H_2O$	3.155, 15°	Schulten. C. R. 100, 877.
Köttigite	$Zn_3\,(As\,O_4)_2 .\ 8\,H_2\,O$	3.1	Köttig. J. 2, 771.
Native nickel arsenate	$Ni_3\,(As\,O_4)_2$	4.982	Bergemann. J. 11, 728.
Erythrite	$Co_3\,(As\,O_4)_2 .\ 8\,H_2\,O$	2.948	Dana's Mineralogy.
Cabrerite	$(Ni\,Co\,Mg)_3\,(As\,O_4)_2 .\ 8\,H_2\,O.$	2.96	Ferber. B. H. Ztg. 22, 306.
Roselite	$(Ca\,Co\,Mg)_3\,(As\,O_4)_2 .\ 2\,H_2\,O.$	3.5—3.6	Schrauf. N. J. 1874, 870.
"	"	3.46, 3°	Weisbach. N. J. 1874, 871.
Caryinite	$(Pb\,Mn\,Ca)_3\,(As\,O_4)_2$	4.25	Lundström. Dana's Min., 3d App.
Berzeliite	$Mg_3\,Ca_3\,(As\,O_4)_4$	2.52	Dana's Mineralogy.
Haidingerite	$H\,Ca\,As\,O_4 .\ H_2\,O$	2.848	Turner. Dana's Min.
Pharmacolite	$2\,H\,Ca\,As\,O_4 .\ 5\,H_2\,O$	2.64—2.73	Dana's Mineralogy.
Wapplerite	$H\,(Ca\ Mg)\,As\,O_4 .\ 7\,H_2\,O.$	2.48	Frenzel. Dana's Min., 2d App.
Forbesite	$2\,H\,(Co\,Ni)\,As\,O_4 .\ 7\,H_2\,O.$	3.086	Forbes. P. M. (4), 25, 103.
Scorodite	$Fe'''\,As\,O_4 .\ 2\,H_2\,O$	3.11	Damour. Ann. (3), 10, 406.
"	"	3.18	
" Artificial	"	3.28	Verneuil and Bourgeois. C. R. 90, 224.
Carminite	$Pb_3\,Fe'''_{10}\,(As\,O_4)_{12}$	4.105	Dana's Mineralogy.
Trögerite	$(U\ O_2)_3\ (As\ O_4)_2 .\ 12\,H_2\,O.$	3.23	Weisbach. N. J. 1873, 316.
Uranospinite	$(U\,O_2)_2\,Ca\,(As\,O_4)_2 .\ 8\,H_2\,O.$	3.45	" "
Zeunerite	$(U\,O_2)_2\,Cu\,(As\,O_4)_2 .\ 8\,H_2\,O.$	3.53	" "

2d. Basic Orthoarsenates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Adamite	$Zn_2\,(O\,H)\,As\,O_4$	4.338, 18°	Friedel. C. R. 62, 692.
Native nickel arsenate	$Ni_5\,O_2\,(As\,O_4)_2$	4.838	Bergemann. J. 11, 728.
Olivenite	$Cu_2\,(O\,H)\,As\,O_4$	4.378	Damour. Ann. (3), 13, 404.
"	"	4.135	Hermann. J. P. C. 33, 291.
Clinoclasite	$Cu_3\,(O\,H)_3\,As\,O_4$	4.19—4.36	Dana's Mineralogy.
"	"	4.312	Damour. Ann. (3), 13, 404.
"	"	4.38, 19°	Hillebrand. Private communication.
Euchroite	$Cu_3(OH)_3AsO_4.6H_2O$	3.389	Dana's Mineralogy.
Erinite	$Cu_5\,(O\,H)_4\,(As\,O_4)_2$	4.043	" "

Name.	Formula.	Sp. Gravity.	Authority.
Cornwallite	$Cu_5(OH)_4(AsO_4)_2 . H_2O$.	4.160	Dana's Mineralogy.
Tyrolite	$Cu_5(OH)_4(AsO_4)_2 . 7H_2O$.	3.02—3.098	" "
"	"	3.162	Church. J.C.S. 26, 108.
"	"	3.27, 20°.5	Hillebrand. Private communication.
Chalcophyllite	$Cu_8(OH)_{10}(AsO_4)_2 . 7H_2O$.	2.659	Damour. Ann. (3), 13, 404.
"	"	2.435	Hermann. J. P. C. 33, 294.
Conichalcite	$CuCa(OH)AsO_4$.	4.123	Fritzsche. J. 2,772.
Bayldonite	$Cu_3Pb(OH)_2(AsO_4)_2 . H_2O$.	5.35	Church. J. C. S. 18, 265.
Liroconite	$Cu_2Al(OH)_4AsO_4 . 4H_2O$.	2.926	Haidinger. Dana's Min.
"	"	2.964	Damour. Ann. (3), 13, 404.
"	"	2.985	Hermann. J. P. C. 33, 296.
Chenevixite	$Cu_3 Fe'''_2 (OH)_6 (AsO_4)_2$.	3.93	Pisani. C. R. 62, 690.
Pharmacosiderite	$Fe'''_4(OH)_3(AsO_4)_3$	2.9—3.0	Dana's Mineralogy.
Arseniosiderite	$Fe'''_4 Ca_3 (OH)_9 (AsO_4)_3$.	3.520	Dufrenoy.
"	"	3.88	Rammelsberg.
"	"	3.36	Church. J. C. S. 26, 102.
Allaktite	$Mn_7(OH)_8(AsO_4)_2$	3.83—3.85	Sjögren. A. J. S. (3), 27, 494.
Rhagite	$Bi_5(OH)_9(AsO_4)_2$	6.82, 22°	Weisbach. N. J. 1874, 302.
Mixite	$BiCu_{10}(OH)_8(AsO_4)_5 . 7H_2O$.	2.66	Schrauf. Z. K. M. 4, 277.
"	"	3.79, 23°.5	Hillebrand. Private communication.
Walpurgite	$(UO_2)_3Bi_{10}(AsO_4)_4(OH)_{24}$.	5.64	Weisbach. N. J. 1873, 316.

3d. Pyroarsenates and Arsenites.

Name.	Formula.	Sp. Gravity.	Authority.
Magnesium pyroarsenate	$Mg_2As_2O_7$	3.7305, 15°	Stallo. F. W. C.
" "	"	3.7649, 18°	
Zinc pyroarsenate	$Zn_2As_2O_7$	4.6989 } 21°	" "
" "	"	4.7034 } 21°	
Manganese pyroarsenate	$Mn_2As_2O_7$	3.6625, 25°	" "
" "	"	3.6832 } 23°	
" "	"	3.6927 } 23°	
Lead arsenite	$PbAs_2O_4$	5.85, 23°	Schafarik. J. P. C. 90, 12.

XXXVI. PHOSPHATES, VANADATES, AND ARSENATES, COMBINED WITH HALOIDS.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium fluo-phosphate*	$Na_4(PO_4)F.\ 12H_2O$	2.2165	Briegleb. J. 8, 338.
Sodium fluo-arsenate*	$Na_4(AsO_4)F.\ 12H_2O$	2.849	Briegleb. J. 8, 339.
Wagnerite	$Mg_2(PO_4)F$	2.985 } 15°	Rammelsberg. P. A. 64, 251.
"	"	3.068 } 15°	
"	"	3.12	Pisani. Z. K. M. 3, 645.
Artificial vanadium wagnerite.	$Ca_2(VO_4)Cl$	4.01	Hautefeuille. J. C. S. (2), 12, 131.
Herderite	$Ca\,Gl\,(PO_4)F$	3.00	Hidden and Mackintosh. A. J. S. (3), 27, 135.
"	"	3.006	Penfield and Harper. A. J. S. (3), 32, 107.
"	"	3.012	
Triplite	$(Fe\,Mn)_2(PO_4)F$	3.617	Bergemann. J. P. C. 79, 414.
"	"	3.83—3.90	Siewert. J. 26, 1185.
Amblygonite	$Al\,Li\,(PO_4)F$	3.118	Breithaupt. J. P. C. 16, 476.
"	"	3.088	Penfield. A. J. S. (3), 18, 295.
"	"	3.046	Brush. A. J. S. (2), 34, 243.
Durangite	$Al\,Na\,(AsO_4)F$	3.937	Brush. A. J. S. (3), 11, 464.
Fluorapatite	$Ca_5(PO_4)_3F$	3.166—3.235	G. Rose. P. A. 9, 185.
"	"	3.091—3.216	Pusirewski. J. 15, 763.
"	"	3.25	Church. J. C. S. 26, 101.
Chlorapatite	$Ca_5(PO_4)_3Cl$	3.054, artif.	Manross. J. 5, 10.
"	"	2.98 "	Daubreé. "Études synthétiques."
Pyromorphite	$Pb_5(PO_4)_3Cl$	7,008, artif.	Manross. J. 5, 10.
"	"	7.054—7.208	G. Rose. P. A. 9, 209.
"	"	7.36	Fuchs. J. 20, 1001.
Vanadinite	$Pb_5(VO_4)_3Cl$	6.707, 12°, artif.	Roscoe. Z. C. 13, 357.
"	"	6.886	Rammelsberg. J. 9, 872.
"	"	6.863	Struve. J. 12, 805.
Mimetite	$Pb_5(AsO_4)_3Cl$	7.218	Rammelsberg. J. 7, 856.
"	"	7.32	Smith. J. 8, 965.
" Artificial	"	7.12	Michel. B. S. M. 10, 185.
Ekdemite	$Pb_5(AsO_4)_2Cl_4$	7.14	Nordenskiöld. Z. K. M. 2, 306.
Endlichite	$Pb_5(AsO_4)_3Cl, + Pb_5(VO_4)_3Cl.$	6.864	Genth. Am. Phil. Soc., 1885.

*Baker (J. C. S., May, 1885) assigns more complex formulæ to these salts.

XXXVII. ANTIMONITES AND ANTIMONATES.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium antimonite	$Na\,Sb\,O_2 . 3\,H_2\,O$	2.864	Terreil. Ann. (4), 7, 350.
Sodium hydrogen antimonite.	$Na\,H_2\,(Sb\,O_2)_3$	5.05	" "
Romeite	$Ca\,(Sb\,O_2)\,(Sb\,O_3)$?	4.675	Damour. J. 6, 837.
"	"	4.714	
Atopite	$Ca_2\,Sb_2\,O_7$	5.03	Nordenskiöld. Dana's Min., 3d App.
Barcenite	$Ca\,Hg\,(Sb\,O_3)_4$	5.353, 20°	Mallet. A. J. S. (3), 16, 306.
Monimolite	$Pb_4\,(Sb\,O_4)_2\,O$	5.94	Igelström. Dana's Min.
Bindheimite	$Pb_3\,(Sb\,O_4)_2 . 4H_2\,O$	4.60—4.76	Hermann. J. P. C. 34, 179.
"	"	5.01, 19°	Hillebrand. Bull. 20, U. S. G. S.
Nadorite	$Pb\,(Sb\,O_2)\,Cl$	7.02	Flajolot. J. 23, 1280.
Stibioferrite	$4\,Fe'''\,Sb\,O_4 . 8\,H_2\,O$	3.598	Goldsmith. Dana's Min., 2d App.
Thrombolite	$Cu_{10}\,Sb_6\,O_{19} . 19\,H_2\,O$	3.668	Schrauf. Z. K. M. 4, 28.

XXXVIII. COLUMBATES AND TANTALATES.*

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Magnesium columbate	$Mg_4\,Cb_2\,O_9$	4.3	Joly. C. R. 81, 268.
Manganese columbate	?	4.94	Joly. B. S. C. 25, 67.
Columbite	$Fe\,Cb_2\,O_6$	5.469—5.495	Schlieper. Dana's Min.
"	"	5.447	Oesten. Dana's Min.
"	"	5.432—5.452	Breithaupt. J. 11, 720.
"	"	5.40—5.43	Müller. J. 11, 721.
Manganese columbite	$Mn\,(Cb\,O_3)\,(Ta\,O_3)$	6.59	Comstock. A. J. S. (3), 19, 131.
Tantalite	$Fe\,Ta_2\,O_6$	7.264	Nordenskiöld. P. A. 26, 488.
"	"	7.936	Berzelius. Dana's Min.
"	"	7.703	Jenzsch. Dana's Min.
"	"	7.277—7.414	Rose. J. 11, 720.
"	"	7.2	Smith. A. J. S. (3), 14, 323.
Mangantantalite	$Mn\,Ta_2\,O_6$	7.37	Arzruni. J. C. S. 54, 234.
Sipylite	$Er\,Cb\,O_4$	4.883, 16°	Mallet. Z. K. M. 6, 518.

* For samarskite, microlite, fergusonite, and other natural columbotantalates see Dana's Mineralogy. The formulæ here assigned to columbite, tantalite, and sipylite are only approximative, representing the typical compounds.

XXXIX. CARBONATES.

1st. Simple Carbonates.

Name.	Formula.	Sp. Gravity	Authority.
Lithium carbonate	$Li_2 C O_3$	2.111	Kremers. J. 10, 67.
" "	"	1.787, fused	Quincke. P. A. 138, 141.
Sodium carbonate	$Na_2 C O_3$	2.4659	Karsten. Schw. J. 65, 394.
" "	"	2.430	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.509	Filhol. Ann. (3), 21, 415.
" "	"	2.407, 20°.5	Favre and Valson. C. R. 77, 579.
" "	"	2.490	Schröder. Dm. 1873.
" "	"	2.510	Schröder. Dm. 1873.
" "	"	2.041, 960°	Braun. J. C. S. (2), 13, 31.
" "	"	2.45, fused	Quincke. P. A. 135, 642.
" "	$Na_2 C O_3 . 8 H_2 O$	1.51	Thomson. Ann. Phil. (2), 10, 442.
" "	$Na_2 C O_3 . 10 H_2 O$	1.423	Haidinger. See Böttger.
" "	"	1.454, m. of 4	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.475	Schiff.
" "	"	1.463	Buignet. J. 14, 15.
" "	"	1.455, 15°.5	Holker. P. M. (3), 27, 214.
" "	"	1.4402	Stolba. J. P. C. 97, 503.
" "	"	1.456, 19°	Favre and Valson. C. R. 77, 579.
Thermonatrite	$Na_2 C O_3 . H_2 O$	1.5—1.6	Dana's Mineralogy.
Potassium carbonate	$K_2 C O_3$	2.2643	Karsten. Schw. J. 65, 394.
" "	"	2.103	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.267	Filhol. Ann. (3), 21, 415.
" "	"	2.105	W. C. Smith. Am. J. P. 53, 145.
" "	"	2.00, 1150°	Braun. J. C. S. (2), 13, 31.
Silver carbonate	$Ag_2 C O_3$	6.0766	Karsten. Schw. J. 65, 394.
" "	"	6.0, 17°.5	Kremers. P. A. 85, 43.
Thallium carbonate	$Tl_2 C O_3$	7.06	Lamy. J. 15, 186.
" "	"	7.164	Lamy and Des Cloizeaux. Nature 1, 116.
Magnesium carbonate	$Mg C O_3$	3.037	Neumann. P. A. 23, 1.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Magnesium carbonate	$Mg\ C\ O_3$	3.056	Mohs.
" "	"	3.065	Scheerer.
" "	"	3.017	Breithaupt.
" "	"	3.033	Hauer.
" "	"	3.017	Marchand and Scheerer. J. 3, 760.
" "	"	3.007	Jenzsch. J. 6, 848.
" "	"	3.076	
" "	"	3.033	Zepharovich. J. 8, 975.
" "	"	3.015	Zepharovich. J. 18, 906.
" "	$Mg\ C\ O_3 . 3\ H_2\ O$	1.875	Beckurts. J. C. S. 42, 14.
Zinc carbonate	$Zn\ C\ O_3$	4.339	Smithson.
" "	"	4.442	Mohs. See Böttger.
" "	"	4.3765	Karsten. Schw. J. 65, 394.
" "	"	4.45	Naumann.
" "	"	4.42	Haidinger.
Cadmium carbonate	$Cd\ C\ O_3$	4.42, 17°	Herapath. P. M. 64, 321.
" "	"	4.4938	Karsten. Schw. J. 65, 394.
" "	"	4.258	Schröder. Dm. 1873.
Calcium carbonate	$Ca\ C\ O_3$	2.7000	Karsten. Schw. J. 65, 394.
" " Chalk	"	2.6946	
" " Aragonite	"	2.931	Haidinger.
" " "	"	2.927	Biot.
" " "	"	2.945	Beudant.
" " "	"	2.947	
" " "	"	2.931	Mohs.
" " "	"	2.938	Breithaupt.
" " "	"	2.995	
" " "	"	2.926	Neumann. P. A. 23, 1.
" " "	"	2.933, 0°	Kopp.
" " "	"	2.93	Nendtwich.
" " "	"	2.92	Riegel. J. 4, 819.
" " "	"	2.93	Stieren. J. 9, 882.
" " "	"	2.932	Luca. J. 11, 732.
" " Calcite	"	2.7064	Karsten. Schw. J. 65, 394.
" " "	"	2.6987	
" " "	"	2.7213	Beudant.
" " "	"	2.7234	
" " "	"	2.750	Neumann. P. A. 23, 1.
" " "	"	2.702	Hochstetter. J. 1, 1222.
" " "	"	2.72	Kopp. J. 16, 5.
" " "	" Artificial	2.71	Bourgeois. Ann. (5), 29, 493.
" "	$Ca\ C\ O_3 . 5\ H_2\ O$	1.783	Pelouze.
" "	"	1.75	Salm-Horstmar. P. A. 35, 515.
Strontium carbonate	$Sr\ C\ O_3$	3.605	Mohs. See Böttger.

Name.	Formula.	Sp. Gravity.	Authority.
Strontium carbonate	$Sr\,C\,O_3$	3.6245	Karsten. Schw. J. 65, 394.
" "	"	3.613	v. der Marck. J. 3, 759.
" " Precip.	"	3.548	Schröder. P. A. 106, 226.
" " "	"	3.620	
Barium carbonate	$Ba\,C\,O_3$	4.24	Breithaupt.
" "	"	4.301	Mohs.
" "	"	4.35	Kirwan.
" "	"	4.3019	Karsten. Schw. J. 65, 394.
" "	"	4.565	Filhol. Ann. (3), 21, 415.
" " Precip.	"	4.216	Schröder. P. A. 106, 226.
" " "	"	4.235	
" " "	"	4.372	
" " Ppt. hot	"	4.1721	Schweitzer. Contrib. Lab. Univ. of Missouri, 1876.
" " "	"	4.1975	
" " Ppt. cold	"	4.1609	
" " "	"	4.2811	
Lead carbonate	$Pb\,C\,O_3$	6.465	Mohs. See Böttger.
" "	"	6.5	John.
" "	"	6.47	Breithaupt.
" "	"	6.4277	Karsten. See Böttger.
" "	"	6.60	Smith. J. 8, 972.
" "	"	6.510	Schröder. P. A. Ergänz. Bd. 6, 622.
" "	"	6.517	
Manganese carbonate	$Mn\,C\,O_3$	3.592	Mohs. See Böttger.
" "	"	3.553	Kersten. J. P. C. 37, 163.
" "	"	3.6608	Kranz.
" "	"	3.57	Grüner. J. 3, 767.
" " Ppt.	"	3.122	Schröder. P. A. 106, 226.
" " "	"	3.129	
Iron carbonate	$Fe\,C\,O_3$	3.829	Mohs. See Böttger.
" "	"	3.815	Dufrenoy.
" "	"	3.872	Neumann. P. A. 23, 1.
" "	"	3.698	Breithaupt. J. P. C. 14, 445.
" "	"	3.796, 0°	Kopp.
Lanthanite	$La_2\,(C\,O_3)_3 . 8\,H_2\,O$	2.605, 20°	Genth. A. J. S. (2), 28, 425.
"	"	2.666	Blake. J. 6, 850.
Didymium carbonate	$Di_2\,(C\,O_3)_3 . 8\,H_2\,O$	2.850, 15°	Cleve. U. N. A. 1885.
" "	"	2.872, 15°	

2d. Double Carbonates.

Name.	Formula.	Sp. Gravity.	Authority.
Hydrogen sodium carbonate.	$Na\,H\,C\,O_3$	2.192, m. of 2.	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.163	Buignet. J. 14, 15.
" " "	"	2.2208, 15°	Stolba. J. P. C. 97, 503.
" " "	"	2.207	Schröder. Dm. 1878.
" " "	"	2.205	
" " "	"	2.159	W. C. Smith. Am. J. P. 53, 148.
Urao	$Na_3H\,(C\,O_3)_2.\ 2\,H_2O$	2.1478, 21°	Chatard. Private communication.
Hydrogen potassium carbonate.	$K\,H\,C\,O_3$	2.012	Gmelin.
" " "	"	2.092	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.180	Buignet. J. 14, 15.
" " "	"	2.140	Schröder. Dm. 1878.
" " "	"	2.167	
" " "	"	2.078	W. C. Smith. Am. J. P. 53, 145.
Hydrogen ammonium carbonate.	$Am\,H\,C\,O_3$	1.586	Playfair and Joule. M. C. S. 2, 401.
Sodium potassium carbonate.	$K\,Na\,C\,O_3$	2.5289	Stolba. J. 18, 166.
" " "	"	2.5633	
" " "	$K\,Na\,C\,O_3.\ 12\,H_2O$	1.6088	" "
" " "	"	1.6334	
Silver potassium carbonate.	$Ag\,K\,C\,O_3$	3.769	Schulten. C. R. 105, 818.
Gaylussite	$Na_2Ca\,(C\,O_3)_2.\ 5\,H_2O$	1.928	Boussingault. Ann. (2), 31, 270.
"	"	1.950	
Dolomite	$Ca\,Mg\,(C\,O_3)_2$	2.914	Neumann. P. A. 23, 1.
"	"	2.918	
"	"	2.89	Ott. J. 1, 1223.
"	"	2.924	Tschermak. J. 10, 695.
"	"	2.85	Senft. J. 14, 1027.
Hydrodolomite	$Ca\,Mg_3\,(C\,O_3)_4.\ H_2O$	2.495	Rammelsberg. Dana's Min.
"	"	2.83	Hermann. J. P. C. 47, 13.
Bromlite	$Ca\,Ba\,(C\,O_3)_2$	3.718	Thomson.
"	"	3.76, 15°.5	Johnston. P. M. (3), 6, 1.
Barytocalcite	"	3.66	Children. Ann. Phil. (2), 8, 114.
Manganocalcite	$Ca\,Mn_2\,(C\,O_3)_3$	3.037	Breithaupt. P. A. 69, 429.
Pistomesite	$Mg\,Fe\,(C\,O_3)_2$	3.412	Breithaupt. P. A. 70, 146.
"	"	3.417	
Mesitite	$Mg_2\,Fe\,(C\,O_3)_3$	3.349	Breithaupt. P. A. 11, 170.
"	"	3.368	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ankerite	$Ca\,(Mg\,Fe)\,(C\,O_3)_2$	3.01	Luboldt. Dana's Min.
"	"	3.008	Ettling. Dana's Min.
"	"	3.072	Boricky. J. 22, 1245.
Dawsonite	$Al\,Na\,(C\,O_3)\,(O\,H)_2$	2.40	Harrington. Dana's Min., 2d App.

3d. Basic Carbonates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Hydromagnesite	$Mg_4\,(C\,O_3)_3\,(O\,H)_2.\,3\,H_2\,O.$	2.145	Smith and Brush. J. 6, 851.
"	"	2.180	
Hydrogiobertite	$Mg_2\,C\,O_4.\,3\,H_2\,O$	2.149—2.174	Scacchi. See Z. K. M. 12, 202.
Hydrozincite	$Zn_3\,(C\,O_3)\,(O\,H)_4$	3.252	Petersen and Voit. A. C. P. 108, 48.
Zaratite	$Ni_3(CO_3)(OH)_4.4H_2O$	2.57	B. Silliman, Jr. J. 1, 1225.
"	"	2.693	
Malachite	$Cu_2\,(C\,O_3)\,(O\,H)_2$	3.715	Breithaupt. Schw. J. 68, 291.
"	"	3.898	Breithaupt. J. P. C. 16, 475.
"	"	4.06	Smith. J. 8, 975.
Azurite	$Cu_3\,(C\,O_3)_2\,(O\,H)_2$	3.88	" "
"	"	3.5—3.831	Dana's Mineralogy.
Bismutosphærite	$Bi_2\,C\,O_5$	7.28—7.32	Weisbach. J. C. S. 34, 117.
"	"	7.42	Wells. A. J. S. (3), 34, 271.
Bismutite	$Bi_2\,H_2\,C\,O_6$	6.86	Louis. J. C. S. 54, 83.

XL. SILICATES.*

1st. Silicates Containing But One Metal.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sodium metasilicate	$Na_2\ Si\ O_3.\ 8\ H_2\ O$	1.666, 18°	F. W. Clarke.
Phenakite	$Gl_2\ Si\ O_4$	2.966	Kokscharow. J. 10, 664.
"	"	2.996	
"	"	2.967, 23°	Hillebrand. Bull. 20, U. S. G. S.
"	"	2.95	Hatch. N. J. 1888, 171.
Bertrandite	$Gl_4\ H_2\ Si_2\ O_9$	2.593	Bertrand. B. S. M. 3, 96.
"	"	2.586	Damour. B. S. M. 6, 252.
"	"	2.55	Scharizer. Z. K. M. 14, 41.
Enstatite	$Mg\ Si\ O_3$	3.19	Damour. Dana's Min.
"	"	3.10—3.13	Kenngott. J. 8, 928.
"	"	3.153	Bröggerand v. Rath. Z. K. M. 1, 22.
" Artificial	"	3.11	Hautefeuille. J. 17, 212.
Forsterite	$Mg_2\ Si\ O_4$	3.243	Rammelsberg. J. 13, 757.
" Boltonite	"	3.008	Silliman, Jr. J. 2, 742.
" "	"	3.208	Smith. J. 7, 821.
" "	"	3.328	
Talc	$Mg_3\ H_2\ Si_4\ O_{12}$	2.48—2.80	Scheerer. J. 4, 793.
"	"	2.682	Senft. Z. G. S. 14, 167.
Serpentine	$Mg_3\ H_4\ Si_2\ O_9$	2.557	Rammelsberg. J. 1, 1195.
"	"	2.644	Delesse. J. 1, 1195.
"	"	2.57	Hermann. J. 2, 764.
"	"	2.564—2.593	Gilm. J. 10, 678.
"	"	2.597—2.622	Hunt. J. 11, 715.

* For sp. gr. of silicates before and after fusion see v. Kobell, Bei. 6, 314.

NOTE.—As regards the natural silicates this table is far from complete. Only those compounds are included which admit of fairly definite chemical formulation, and only a few typical determinations of specific gravity are given in each case. Furthermore, the arrangement is absolutely chemical, and is in no sense dependent upon mineralogical considerations. Thus, for example, all the magnesium silicates are brought together; and so also are the numerous double silicates of aluminum and calcium, quite regardless of their classification as mineral species. Many micas, chlorites, scapolites, etc., are omitted altogether; but the omissions are not serious, for all the important data have been many times collected in the larger treatises on mineralogy, and are, therefore, easily accessible.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Willemite	$Zn_2\ Si\ O_4$	4.18	Levy. B. J. 25, 351.
"	"	4.02	Hermann. J. 2, 743.
"	"	4.11	Mixter. J. 21, 1006.
"	"	4.16	
" Artificial	"	4.25	Gorgeu. B. S. C. 47, 146.
Calamine	$Zn_2\ Si\ O_4.\ H_2\ O$	3.435	Hermann. J. P. C. 33, 98.
"	"	3.43—3.49	Monheim. J. 1, 1187.
"	"	3.42	Schnabel. J. 11, 710.
"	"	3.36	Wieser. J. 24, 1156.
"	"	3.338, 21°	McIrby. J. 26, 1175.
Wollastonite	$Ca\ Si\ O_3$	2.884	Seibert. See Böttger.
"	"	2.853	v. Rath. J. 24, 1145.
"	"	2.799	Piquet. J. 25, 1104.
" Artificial	"	2.7	Bourgeois. Ann. (5), 29, 441.
" "	"	2.88	Gorgeu. Ann. (6), 4, 515.
Xonaltite	$4\ Ca\ Si\ O_3.\ H_2\ O$	2.710—2.718	Rammelsberg. J. 19, 932.
Okenite	$Ca\ Si_2\ O_5.\ 2\ H_2\ O$	2.324	Schmidt. J. 18, 889.
"	"	2.28	Kobell. Dana's Min.
"	"	2.362	Connel. Dana's Min.
Rhodonite	$Mn\ Si\ O_3$	3.63	Hermann. J. 2, 738.
"	"	3.63	Igelström. J. 4, 768.
"	"	3.65	Fino. J. 36, 1891.
" Artificial	"	3.68	Gorgeu. Ann. (6), 4, 515.
Hydrorhodonite	$Mn\ Si\ O_3.\ H_2\ O$	2.70	Engström.
Penwithite	$Mn\ Si\ O_3.\ 2\ H_2\ O$	2.49	Collins. Z. K. M. 5, 623.
Tephroite	$Mn_2\ Si\ O_4$	4.1	Brush. J. 17, 837.
"	"	4.0	Mixter. S. 21, 1006.
" Artificial	"	4.34	Gorgeu. C. R. 98, 920.
" "	"	4.08	Gorgeu. Ann. (6), 4, 515.
Friedelite	$Mn_4\ H_4\ Si_3\ O_{12}$	3.07	Bertrand. C. R. 82, 1167.
Grunerite	$Fe\ Si\ O_3$	3.713	Gruner. C. R. 24, 794.
Fayalite	$Fe_2\ Si\ O_4$	4.138	Gmelin. B. J. 21, 200.
"	"	4.006	Delesse. J. 7, 821.
" Artificial	"	4.4	Gorgeu. Ann. (6), 4, 515.
Chrysocolla	$Cu\ Si\ O_3.\ 2\ H_2\ O$	2.0—2.238	Dana's Mineralogy.
Dioptase	$Cu\ H_2\ Si\ O_4$	3.314	Kenngott. J. 3, 732.
"	"	3.348	
Kyanite	$Al_2\ O_2\ Si\ O_3$	3.48	Igelström. J. 7, 819.
"	"	3.661	Erdmann. B. J. 24, 311.
"	"	3.678	Jacobson. P. A. 68, 416.
Andalusite	$Al_3\ (Si\ O_4)_3\ (Al\ O)_3$	3.070	Rowney. J. 14, 982.
"	"	3.154	Erdmann. B. J. 24, 311.

Name.	Formula.	Sp. Gravity.	Authority.
Andalusite	$Al_3 (Si O_4)_3 (Al O)_3$	3.152	Kersten. J. P. C. 37, 168.
"	"	3.160	Damour. Ann. d. Mines (5), 4, 53.
"	"	3.07—3.12	Schmid. P. A. 97, 113.
Fibrolite	"	3.18—3.21	Damour. J. 18, 881.
"	"	3.239	Erdmann. B. J. 24, 311.
"	"	3.238	Dana. Dana's Min.
"	"	3.232	Brush. " "
Dumortierite	$Al_2 (Si O_4)_3 (Al O)_6$	3.36	Damour. Z. K. M. 6, 289.
Xenolite	$Al_4 (Si O_4)_3$	3.58	Nordenskiöld. P. A. 56, 643.
Kaolinite	$Al_2 O H (Si O_4)_2 H_3$	2.6	Clark. J. 4, 786.
"	"	2.4—2.63	Dana's Mineralogy.
"	"	2.611	Hillebrand. Bull. 20, U. S. G. S.
Pyrophyllite	$Al H (Si O_3)_2$	2.78—2.79	Sjögren. J. 2, 757.
"	"	2.81	Brush. J. 11, 707.
"	"	2.804	Genth. Z. K. M. 4, 384.
"	"	2.82	Tyson and Allen. J. 15, 745.
"	"	2.812	Genth. J. 36, 1903.
Allophane	$Al_2 Si O_5 . 6 H_2 O$	2.02	Schnabel. J. 2, 756.
"	"	1.85—1.89	Dana's Mineralogy.
Szaboite	$Fe'''_2 (Si O_3)_3$	3.505	Koch. Z. K. M. 3, 308.
Nontronite. Chloropal	$Fe'''_2 (Si O_3)_3 . 5 H_2 O$	1.727—1.870	Dana's Mineralogy.
" "	"	2.105	Thomson. Dana's Min.
Zircon	$Zr Si O_4$	4.047	Damour. J. 1, 1171.
"	"	4.595	Wetherill. J. 6, 796.
"	"	4.602	Hunt. J. 4, 768.
"	"	4.625	Hunt. J. 4, 768.
"	"	4.395 } before heating.	Church. J. 17, 834.
"	"	4.515 } before heating.	Church. J. 17, 834.
"	"	4.438 } after heating	Church. J. 17, 834.
"	"	4.863 } after heating	Church. J. 17, 834.
"	"	4.709, 21°	Cross and Hillebrand. J. 36, 1839.
Cerium orthosilicate	$Ce_4 (Si O_4)_3$	4.9	Didier. C. R. 19, 882.
Thorium metasilicate	$Th (Si O_3)_2$	5.56, 25°	Troost and Ouvrard. C. R. 105, 255.
Thorium orthosilicate	$Th Si O_4$	6.82, 16°	" "
Thorite. (Orangite)	$2 Th Si O_4 . 3 H_2 O$?	5.397	Bergemann. P. A. 82, 562.
" "	"	5.34	Krantz. P. A. 82, 586.
" "	"	5.19	Damour. Ann. d. Mines (5), 1, 587.
" "	"	4.888—5.205	Chydenius. P. A. 119, 43.
" (Ordinary)	"	4.344—4.397	" "
Eulytite	$Bi_4 (Si O_4)_3$	5.912—6.006	Dana's Mineralogy.
"	"	6.106, 17°	v. Rath. J. 22, 1209.

2d. Silicates Containing More Than One Metal.

Name.	Formula.	Sp. Gravity.	Authority.
Pectolite	$H\ Na\ Ca_2\ (Si\ O_3)_3$	2.784	Scott. J. 5, 866.
"	"	2.778—2.881	Heddle and Greg. J. 8, 952.
"	"	2.873	Clarke. Bull. 9, U. S. G. S.
Malacolite	$Ca\ Mg\ (Si\ O_3)_2$	3.37	Bonsdorff. Dana's Min.
"	"	3.285	Haushofer. J. 20, 984.
"	"	3.192	Doelter. Z. K. M. 4, 89.
"	"	3.273—3.275	Hunt. Dana's Min.
Tremolite	$Ca\ Mg_3\ (Si\ O_3)_4$	2.930—3.004	Rammelsberg. J. 11, 694.
"	"	2.99	Michaelson. Dana's Min.
"	"	2.996, 22°	König. Z. K. M. 1, 50.
Hedenbergite	$Ca\ Fe\ (Si\ O_3)_2$	3.467, 25°	Wolff. J. P. C. 34, 236.
"	"	3.492	Doelter. Z. K. M. 4, 90.
Monticellite	$Ca\ Mg\ Si\ O_4$	3.119	Rammelsberg. J. 13, 758.
"	"	3.05	Freda. J. 36, 1876.
Knebelite	$Fe\ Mn\ Si\ O_4$	3.714, 18°.5	Doebereiner. Schw. J. 21, 49.
"	"	4.122	Erdmann. Dana's Min.
Kentrolite	$Mn'''_2\ Pb_2\ Si_2\ O_9$	6.19	v. Rath. Z. K. M. 5, 35.
Melanotekite	$Fe'''_2\ Pb_2\ Si_2\ O_9$	5.73	Lindström. Z. K. M. 6, 515.
Hyalotekite	$Ca\ Ba\ Pb\ Si_6\ O_{15}$?	3.81	Nordenskiöld.
Petalite	$Al\ Li\ (Si_2\ O_5)_2$	2.447—2.455	Rammelsberg. J. 5, 858.
"	"	2.412—2.553	Damour. Dana's Min.
" (Castorite)	"	2.382—2.401	Breithaupt. P. A. 69, 438.
Spodumene	$Al\ Li\ (Si\ O_3)_2$	3.170	Mohs. See Böttger.
"	"	3.1327—3.137	Rammelsberg. J. 5, 857.
"	"	3.16	Pisani. Z. K. M. 2, 109.
" Hiddenite	"	3.177	Genth. Z. K. M. 6, 522.
Eucryptite	$Al_3\ Li_3\ (Si\ O_4)_3$	2.647	Brush and Dana. A. J. S. (3), 20, 266.
"	"	2.667	
Aluminum lithium silicate	$Al_2\ Li_2\ Si_5\ O_{14}$	2.40, 12°	Hautefeuille. C. R. 90, 541.
" " "	$Al\ Li\ Si_3\ O_8$	2.41, 11°	" "
Albite	$Al\ Na\ Si_3\ O_8$	2.612	Eggertz. Dana's Min.

Name.	Formula.	Sp. Gravity.	Authority.
Albite	$Al\ Na\ Si_3\ O_8$	2.609, 12°	Streng. J. 24, 1151.
"	"	2.59	Leeds. J. 26, 1166.
"	"	2.604	Genth. J. 36, 1896.
"	"	2.618	Baerwald. J. 36, 1897.
"	"	2.601	Lacroix. Z. K. M. 14, 112.
" Artificial	"	2.61	Hautefeuille. Z. K. M. 2, 107.
Jadeite	$Al\ Na\ (Si\ O_3)_2$	3.26—3.36	Damour. B. S. M. 4, 157.
"	"	3.33	Damour. Z. K. M. 6, 290.
"	"	3.326—3.355	Hallock. Unpublished data from U. S. National Museum.
"	"	3.26—3.34	Hawes. Unpublished data from U. S. National Museum.
"	"	3.35	Taylor. Unpublished data from U. S. National Museum.
Nephelite	$Al_8\ Na_3\ Si_9\ O_{34}$	2.56—2.617	Scheerer. P. A. 49, 359.
"	"	2.629	Kimball. J. 18, 762.
"	"	2.600—2.6087	Rammelsberg. Z. G. S. 29, 78.
"	"	2.60—2.63	Lorenzen. J. 36, 1884.
Analcite	$Al\ Na\ H_2\ Si_2\ O_7$	2.262—2.288	Waltershausen. J. 11, 711.
"	"	2.236	Waltershausen. J. 6, 820.
"	"	2.278	Thomson. Dana's Min.
"	"	2.222	Bamberger. Z. K. M. 6, 33.
Eudnophite	"	2.27	Weibye. J. 3, 735.
Paragonite	$Al_3\ Na\ H_2\ (Si\ O_4)_3$	2.779	Schafhäutl. Dana's Min.
" Pregrattite	"	2.895	Oellacher. Dana's Min.
" Cossaite	"	2.890—2.896	Gastaldi. Dana's Min., 2d App.
Hydronephelite	$Al_3\ Na_2\ H\ (Si\ O_4)_3.\ 3\ H_2\ O.$	2.263	Diller. A. J. S. (3), 31, 267.
Natrolite	$Al_2\ Na_2\ H_4\ (Si\ O_4)_3$	2.207, 11°	Gmelin. J. 3, 733.
"	"	2.254—2.258	Kenngott. J. 6, 820.
"	"	2.249	Brush. A. J. S. (2), 31, 365.
Orthoclase	$Al\ K\ Si_3\ O_8$	2.5702	Breithaupt. See Böttger.
"	"	2.573	Rammelsberg. J. 20, 988.
"	"	2.576—2.586	v. Rath. J. 24, 1150.
"	"	2.572—2.595	Genth. J. 36, 1896.
" Artificial	"	2.55, 16°	Hautefeuille. Z. K. M. 2, 514.
Leucite	$Al\ K\ (Si\ O_3)_2$	2.519	Bischof. Dana's Min.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Leucite	$Al\ K\ (Si\ O_3)_2$	2.48	Rammelsberg. J. 9, 852.
"	"	2.479, 23°	v. Rath. J. 27, 1255.
" Artificial	"	2.47, 18°	Hautefeuille. Z. K. M. 5, 411.
Muscovite	$Al_3\ K\ H_2\ (Si\ O_4)_3$	2.817	Kussin. Dana's Min.
"	"	2.714—2.796	Grailich. Dana's Min.
"	"	2.830—2.831	Tschermak. Z. K. M. 8, 127.
"	"	2.855	Scharizer. Z. K. M. 12, 15.
Pollucite	$Al_2\ Cs_2\ H_2\ (Si\ O_3)_5$	2.868—2.892	Breithaupt. P. A. 69, 439.
"	"	2.901	Pisani. J. 17, 850.
"	"	2.893	Rammelsberg. Z. K. M. 6, 286.
Grossularite	$Al_2\ Ca_3\ (Si\ O_4)_3$	3.522—3.536	Hunt. Dana's Min.
"	"	3.609	Websky. J. 22, 1214.
"	"	3.572	Jannasch. J. 36, 1880.
Anorthite	$Al_2\ Ca\ (Si\ O_4)_2$	2.763	Rose. See Böttger.
"	"	2.73	Deville. J. 7, 832.
"	"	2.7325	Potyka. J. 12, 785.
"	"	2.668	Silliman. Dana's Min.
"	"	2.686	v. Rath. J. 27, 1255.
Idocrase	$Al_4\ Ca_8\ (Si\ O_4)_7$?	3.3123—3.3905	Karsten. See Böttger.
"	"	3.384	Rammelsberg. J. 2, 745.
"	"	3.44	Damour. J. 24, 1153.
"	"	3.2533	Korn. J. 36, 1874.
"	"	3.403—3.472	Jannasch. J. 36, 1875.
Melilite	$Al_2\ Ca_6\ Si_5\ O_{19}$	2.9—3.104	Dana's Mineralogy.
"	"	2.95	Damour. Ann. (3), 10, 59.
Meionite*	$Al_6\ Ca_4\ Si_6\ O_{25}$	2.734—2.787	v. Rath. P. A. 90, 87.
"	"	2.716, 16°	Neminar. J. 28, 1227.
Gehlenite	$Al_2\ Ca_3\ Si_2\ O_{10}$	2.9—3.067	Dana's Mineralogy.
"	"	2.997	Janovsky. J. 26, 1170.
Prehnite	$Al_2\ Ca_2\ H_2\ (Si\ O_4)_3$	2.926	Mohs. See Böttger.
"	"	2.845—2.897, 4°	Streng. N. J. 1870, 314.
"	"	3.042	Genth. J. 36, 1185.
Heulandite	$Al_2\ Ca\ H_{10}\ Si_6\ O_{21}$	2.195	Thomson. Dana's Min.
"	"	2.1963	Jeremejew. Z. K. M. 2, 503.
Stilbite	$Al_2\ Ca\ H_{12}\ Si_6\ O_{22}$	2.203	Münster. P. A. 65, 297.

*For other data relative to the scapolite group see Dana's Mineralogy and also Tschermak's memoir in M. C. 4, 884.

Name.	Formula.	Sp. Gravity.	Authority.
Stilbite	$Al_2\,Ca\,H_{12}\,Si_6\,O_{22}$	2.134	Waltershausen. Dana's Min.
"	"	2.16	Schmid. J. 24, 1158.
Laumontite	$Al_2\,Ca\,H_8\,Si_4\,O_{16}$	2.268	Breithaupt. See Böttger.
"	"	2.252	Mallet. Dana's Min.
"	"	2.280—2.310	Gericke. J. 9, 861.
Scolezite	$Al_2\,Ca_2\,H_6\,Si_3\,O_{13}$	2.393	Waltershausen. J. 6, 819.
"	"	2.28	Collier. Dana's Min.
"	"	2.27	Lüdecke. Z. K. M. 6, 312.
Chabazite	$Al_2\,Ca\,H_{12}\,Si_4\,O_{18}$	2.094	Breithaupt. See Böttger
"	"	2.08—2.19	Dana's Mineralogy.
"	"	2.133	Streng. Z. K. M. 1, 519.
"	"	2.115	
Zoisite	$Al_3\,Ca_2\,H\,Si_3\,O_{13}$	3.251—3.361	Rammelsberg. J. 9, 849.
"	"	3.226—3.381	Breithaupt. Dana's Min.
Margarite	$Al_4\,Ca\,H_2\,Si_2\,O_{12}$	2.99	Hermann. J. P. C. 53, 16.
Oligoclase	$Al_5\,Ca\,Na_3\,Si_{11}\,O_{32}$	2.66—2.68	Kerndt. J. 1, 1182.
"	"	2.725	v. Rath. J. 11, 706.
"	"	2.643—2.689	Petersen. J. 25, 1112.
Andesite	$Al_3\,Ca\,Na\,Si_5\,O_{16}$	2.651—2.736	Delesse. J. 1, 1183.
"	"	2.667—2.674	Hunt. J. 14, 995.
Labradorite	$Al_7\,Ca_3\,Na\,Si_9\,O_{32}$	2.719—2.883	Delesse. J. 1, 1183.
"	"	2.709	Damour. J. 3, 723.
"	"	2.697	Hunt. J. 4, 782.
"	"	2.72-2.77, 15°.5	Streng. J. 15, 736.
Faujasite	$Al_4CaNa_2H_4(SiO_3)_{10}.18\,H_2\,O.$	1.923	Damour. Ann. d. Mines (4), 1, 395.
Thomsonite	$2\,Al_2\,(Ca\,Na_2)\,Si_2\,O_8.5\,H_2\,O.$	2.35—2.38	Zippe. Dana's Min.
"	"	2.357	Rammelsberg. J. P. C. 59, 348.
" Lintonite	"	2.32—2.37	Peckham and Hall. A. J. S. (3), 19, 122.
Gmelinite	$Al_2(CaNa_2)H_{12}Si_4O_{18}$	2.07	Damour. J. 12, 796.
"	"	2.099—2.169	Dana's Mineralogy.
"	"	2.100	Liversidge. J. 36, 1895.
Milarite	$Al_2\,Ca_2\,K\,H\,(Si_2\,O_5)_6$	2.5529	Ludwig. Z. K. M. 2, 631.
Phillipsite	$Al_2\,(Ca\,K_2)\,H_8\,Si_4\,O_{16}$	2.201	Waltershausen. Dana's Min.
"	"	2.213	Marignac. B. J. 26, 351.
"	"	2.150, 21°	W. Fresenius. Z. K. M. 3, 42.
"	"	2.160, 20°	
Strontium oligoclase	$Al_5\,Sr\,Na_3\,Si_{11}\,O_{32}$	2.619	Fouqué and Lévy. C. R. 90, 622.
Strontium labradorite	$Al_7\,Sr_3\,Na\,Si_9\,O_{32}$	2.862	" "
Strontium anorthite	$Al_2\,Sr\,(Si\,O_4)_2$	3.043	" "

Name.	Formula.	Sp. Gravity.	Authority.
Barium oligoclase	$Al_5\ Ba\ Na_3\ Si_{11}\ O_{32}$	2.906	Fouqué and Lévy. C. R. 90, 622.
Barium labradorite	$Al_7\ Ba_3\ Na\ Si_9\ O_{32}$	3.333	" "
Barium anorthite	$Al_2\ Ba\ (Si\ O_4)_2$	3.573	" "
Harmotome	$Al_2\ Ba\ H_{10}\ Si_5\ O_{19}$	2.392	Mohs. See Böttger.
"	"	2.44—2.45	Dana's Mineralogy.
"	"	2.447	Damour. Dana's Min.
"	"	2.402, 21°	W. Fresenius. Z. K. M. 3, 42.
Lead oligoclase	$Al_5\ Pb\ Na_3\ Si_{11}\ O_{32}$	3.196	Fouqué and Lévy. C. R. 90, 622.
Lead labradorite	$Al_7\ Pb_3\ Na\ Si_9\ O_{32}$	3.609	" "
Lead anorthite	$Al_2\ Pb\ (Si\ O_4)_2$	4.093	" "
Euclase	$Al\ Gl\ H\ Si\ O_5$	3.036	Mallet. J. 6, 800.
"	"	3.097	Des Cloizeaux. Dana's Min.
"	"	3.096—3.103	Kokscharow. Dana's Min.
"	"	3.087	Guyot. Z. K. M. 5, 250.
Beryl	$Al_2\ Gl_3\ (Si\ O_3)_6$, or	2.813	Mallet. J. 7, 828.
"	$Al_4\ Gl_5\ H_2\ Si_{11}\ O_{34}$	2.686	Haughton. J. 15, 720.
"	"	2.650	Petersen. J. 19, 925.
"	"	2.706	Penfield and Harper. A. J. S. (3), 32, 111.
"	"	2.681—2.725	Kokscharow. Dana's Min.
" Emerald	"	2.614	Boussingault. J. 22, 1216.
" "	"	2.710—2.759	Kammerer. Dana's Min.
Iolite	$Al_4\ Mg_2\ Si_5\ O_{18}$	2.605	Kokscharow. J. 13, 767.
"	"	2.6699, 16°	Schachtel. Z. K. M. 7, 594.
"	"	2.6708, 18°	Jost. Z. K. M. 7, 594.
Ripidolite	$Al_2 Mg_5 Si_3 O_{14}.\ 4 H_2 O$	2.774	Rose. Dana's Min.
"	"	2.603	Hermann. Dana's Min.
"	"	2.673	Marignac. Dana's Min.
"	"	2.714	Blake. Dana's Min.
Arctolite	$Al_2\ Mg\ Ca\ H_2\ (Si\ O_4)_3$	3.03	Blomstrand.
Manganese garnet. Artificial.	$Al_2\ Mn_3\ (Si\ O_4)_3$	4.05, 11°	Gorgeu. C. R. 97, 1303.
Karpholite	$Al_2\ Mn\ H_4\ Si_2\ O_{10}$	2.935	Breithaupt. Dana's Min.
"	"	2.876	Koninck. Z. K. M. 4, 222.
Almandite	$Al_2\ Fe''_3\ (Si\ O_4)_3$	3.90—4.236	Wachtmeister. Dana's Min.
"	"	4.196	Mallet. Dana's Min.
"	"	4.197	Websky. J. 21, 1013.
"	"	4.127	Heddle. J. 36, 1881.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Partschinite	$Al_2\ Fe''\ Mn_2\ (Si\ O_4)_3$	4.006	Haidinger. J. 7, 826.
Venasquite	$Al_2\ Fe''\ H_2\ Si_3\ O_{11}$	3.26	Damour. Z. K. M. 4, 413.
Chloritoid	$Al_2\ Fe''\ H_2\ Si\ O_7$	3.52	Smith. J. 3, 741.
"	"	3.513	Hunt. J. 14, 1011.
"	"	3.538	Tschermak and Sipöcz. Z. K. M. 3, 508.
Ouvarovite	$Cr_2\ Ca_3\ (Si\ O_4)_3$	3.5145	Erdmann. B. J. 23, 291.
"	"	3.41—3.52	Dana's Mineralogy.
Acmite	$Fe'''\ Na\ (Si\ O_3)_2$	3.536—3.543	Breithaupt. See Böttger.
"	"	3.530	Rammelsberg. J. 11, 695.
"	"	3.520	Doelter. Z. K. M. 4, 92.
Andradite	$Fe'''_2\ Ca_3\ (Si\ O_4)_3$	3.85	Damour. J. 9, 848.
"	"	3.796—3.798	Kokscharow. J. 12, 782.
"	"	3.797	Fellenberg. J. 20, 984.
"	"	3.740	Dana. Z. K. M. 2, 311.
" Demantoid	"	3.828	Rammelsberg. Z. K. M. 3, 103.
"	"	3.81, 15°	Cossa. Z. K. M. 5, 602.
Crocidolite	$Fe'''_2\ Fe''_3\ Na_2\ H_4\ (Si\ O_3)_9$.	3.200	Stromeyer and Hausmann. P. A. 23, 153.
"	"	3.2	Chester. A. J. S. (3), 34, 108.
Lievrite	$Fe'''\ Fe''_2\ Ca\ H\ Si_2\ O_9$.	3.711	Tobler. J. 9, 851.
"	"	4.023	Städeler. J. 19, 934.
"	"	4.05	Lorenzen. J. 36, 1879.
Thuringite. (Owenite)	$Fe'''_4\ Fe''_4\ Si_3\ O_{16}.\ 5\ H_2\ O$.	3.197, 20°	Genth. A. J. S. (2), 16, 167.
" "	"	3.191	Smith. A. J. S. (2), 18, 376.
"	"	3.177	Zepharovich. Z. K. M. 1, 371.
Sphene	$Ca\ Ti\ Si\ O_5$	3.49—3.51	Hunt. J. 6, 837.
"	"	3.44	Fuchs. Dana's Min.
"	"	3.535	Rose. " "
" Greenovite	"	3.547	Hintze. Z. K. M. 2, 310.
" Artificial	"	3.45	Hautefeuille. J. 17, 216.
Guarinite	"	3.487	Guiscardi. J. 11, 718.
Zirconium potassium silicate.	$Zr\ K_2\ Si_2\ O_7$	2.79	Mellis. Göttingen Doct. Diss., 1870.
Zirconium sodium silicate	$Zr_8\ Na_2\ Si\ O_{19}.\ 11\ H_2O$	3.58	" "
Calcium tin silicate	$Ca\ Sn\ Si\ O_5$	4.34	Bourgeois. C. R. 104, 233.

3d. Boro-, Fluo-, and Other Mixed Silicates.

Name.	Formula.	Sp. Gravity.	Authority.
Danburite	$Ca\ B_2\ Si_2\ O_8$	2.986	Brush and Dana. Z. K. M. 5, 185.
"	"	3.021	
"	"	2.986	Bodewig. Z. K. M. 7, 297.
"	"	2.988	
Datolite	$Ca\ H\ B\ Si\ O_5$	2.989	Mohs. See Böttger.
"	"	2.9911	Breithaupt. See Böttger.
"	"	2.983	Whitney. J. 12, 801.
"	"	2.987—3.014	Tschermak. J. 13, 778.
"	"	2.988	Smith. J. 27, 1270.
Homilite	$Ca_2\ Fe\ B_2\ Si_2\ O_{10}$	3.28	Paikull. Z. K. M. 1, 385.
Howlite	$Ca_2\ H_5\ B_5\ Si\ O_{14}$	2.59	Penfield and Sperry. A. J. S. (3), 34, 221.
Axinite	$Al_3\ (Ca\ Fe\ Mn)_4\ H_2\ B\ Si_5\ O_{21}$.	3.271	Mohs. See Böttger.
Tourmaline. Colorless	$Al\ B\ O_2\ (Si\ O_4)_2\ R'_6$	3.07—3.085	Riggs. A. J. S. (3), 35, 35.
" Red	"	2.998—3.082	Rammelsberg. J. 3, 744.
" "	"	2.997—3.028	Riggs. A. J. S. (3), 35, 35.
" Green	"	3.069—3.112	Rammelsberg. J. 3, 744.
" Brown	"	3.035—3.068	" "
" Black	"	3.205—3.243	" "
" "	"	3.08—3.20	Riggs. A. J. S. (3), 35, 35.
Apophyllite	$Ca_4\ K\ H_8\ (Si\ O_3)_8\ F.\ 4\ H_2\ O$.	2.335	Mohs. See Böttger.
"	"	2.305	Jackson. J. 3, 733.
"	"	2.37	Smith. J. 7, 838.
Leucophane	$Gl_4\ Ca_4\ Na_3\ Si_7\ O_{22}\ F_3$	2.964	Rammelsberg. J. 9, 867.
"	"	2.974	Erdmann. B. J. 21, 168.
Melinophane	$Gl_3\ Ca_3\ Na_{12}\ Si_4\ O_{14}\ F_{12}$	3.00	Scheerer. J. 5, 883.
"	"	3.018	Rammelsberg. J. 9, 867.
Topaz	$Al_2\ Si\ O_4\ F_2$	3.439—3.547	Breithaupt. See Böttger.
"	"	3.52—3.56	Kokscharow. J. 9, 867.
"	"	3.514—3.563	Rammelsberg. J. P. C. 96, 7.
"	"	3.533—3.597	Church. Geol. Mag. (2), 2, 320.
"	"	3.578, 22°	Hillebrand. Bull. 20, U. S. G. S.
Lepidolite	$Al_2\ K\ Li\ Si_3\ O_9\ F_2$	2.834—2.8546	Berwerth. Z. K. M. 2, 523.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Lepidolite	$Al_2 K Li.Si_3 O_9 F_2$	2.838	Scharizer. Z, K. M. 12, 15.
Phlogopite	$Al_2 Mg_5 H K Si_5 O_{18} F_2$	2.78—2.85	Dana's Mineralogy.
"	"	2.81	Kenngott. J. 15, 742.
"	"	2.959, 16°	Berwerth. Z. K. M. 2, 521.
"	"	2.742—2.867	Tschermak. Z. K. M. 3, 127.
Calcium chlorosilicate	$Ca_3 Si O_4 Cl_2$	2.77	Le Chatelier. C. R. 97, 1510.
Sodalite	$Al_4 Na_5 (Si O_4)_4 Cl$	2.401	v. Rath. Dana's Min.
"	"	2.31	Lorenzen. J. 36, 1884.
"	"	2.3405, 21°	Bamberger. Z. K. M. 5, 584.
"	"	2.294—2.314	Kimball. J. 13, 775.
Marialite	$Al_3 Na_4 Si_9 O_{24} Cl$	2.626, 19°	v. Rath. Z. G. S. 18, 635.
Pyrosmalite	$Mn_5 Fe''_5 H_{14} (Si O_4)_8 Cl_2$.	3.168—3.174	Lang. J. P. C. 83, 424.
"	"	3.081	Hisinger. Dana's Min.
Helvite	$Gl_3 Mn_4 (Si O_4)_3 S$	3.306	Lewis. Z. K. M. 7, 425.
"	"	3.23—3.37	Kokscharow. J. 22, 1228.
Danalite	$Gl_3 Fe_3 Zn (Si O_4)_3 S$	3.427	Cooke. A. J. S. (2), 42, 73.
Nosean	$Al_4 Na_6 (Si O_4)_4 S O_4$	2.25—2.4	Dana's Mineralogy.
"	"	2.279—2.399	v. Rath. Z. G. S. 16, 86.
Complex silicate and sulphide.	$Ca_{18} Al_2 S_2 O_{35}$. 2Ca S	3.054	Rammelsberg. J. P. C. (2), 35, 98.
Thaumasite	$Ca_3 Si O_3 S O_4 C O_3 . 14 H_2 O$.	1.877, 19°	Lindström. J. 33, 1484.
Calcium silicophosphate	$Ca_5 Si O_4 (P O_4)_2$	3.042	Carnot and Richard. B. S. M. 6, 241.

XLI. TITANATES AND STANNATES.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Calcium titanate. Artificial.	$Ca Ti O_3$	4.10	Ebelmen.
" " "	"	4.00	Hautefeuille. J. 17, 217.
" " Perofskite.	"	4.017	Rose. B. J. 20, 210.
" " "	"	4.038	Damour. J. 8, 960.
" " "	"	3.974, 20°	Brun. Z. K. M. 7, 389.
Strontium titanate	$Sr_2 Ti_3 O_8$	5.1	Bourgeois. C. R. 108, 141.

Name.	Formula.	Sp. Gravity.	Authority.
Barium titanate	$Ba_2\ Ti_3\ O_8$	5.91	Bourgeois. C. R. 103, 141.
Magnesium titanate	$Mg\ Ti\ O_3$	3.91	Hautefeuille. J. 17, 217.
Magnesium orthotitanate	$Mg_2\ Ti\ O_4$	3.52	" "
Ilmenite	$Fe\ Ti\ O_3$	4.727	Marignac. B. J. 26, 372.
Iron orthotitanate	$Fe_2\ Ti\ O_4$	4.37	Hautefeuille. J. 17, 217.
Zinc titanate	$Zn\ Ti_3\ O_7$	4.92, 15°	Levy. C. R. 105, 380.
Potassium stannate	$K_2\ Sn\ O_3.\ 3\ H_2\ O$	3.197	Ordway. J. 18, 240.

XLII. CYANOGEN COMPOUNDS.*

1st. General Division.

Name.	Formula.	Sp. Gravity.	Authority.
Cyanogen. Liquefied	$C_2\ N_2$	.866, 17°.2	Faraday. P.T. 1845, 155.
Hydrocyanic acid	$H\ C\ N$	.7058, 7°	Gay Lussac. Ann. 95, 136.
" "	"	.6969, 18°	
" "	"	.710, 6°	Trautwein.
" "	"	.706, 2°.8	Cooper. P. A. 47, 527.
Cyanic acid	$H\ C\ N\ O$	1.1558, —20°	Troost and Hautefeuille. J. 21, 314.
" "	"	1.140, 0°	
Cyanuric acid	$H_3\ C_3\ N_3\ O_3$	1.768, 0°	Troost and Hautefeuille. J. 22, 99.
" "	"	2.500, 19°	
" "	"	2.228, 24°	
" "	"	1.725, 48°	
" "	"	1.722	Schröder. Ber. 13, 1070.
" "	"	1.735	
Cyamelide	$(H\ C\ N\ O)_n$	1.974, 0°	Troost and Hautefeuille. J. 22, 99.
"	"	1.774, 24°	
Hydrosulphocyanic acid	$H\ C\ N\ S$	1.0013, 10°	Clasen.
" "	"	1.022	Porrett. P.T. 1814, 548.
" "	"	1.0082	Meitzendorff. P. A. 56, 63.
Tricyanogen trichloride	$C_3\ N_3\ Cl_3$	1.32	Serullas. Ann. (2), 38, 370.
Cyanogen iodide	$C\ N\ I$	1.85	Weltzien's "Zusammenstellung."

* Exclusive of organic cyanides, or compounds containing organic radicles.

2d. Cyanides, Cyanates, and Sulphocyanides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium cyanide	K C N	1.52, 12°	Bödeker. B. D. Z.
Silver cyanide	Ag C N	3.943, 11°	Giesecke. "
Mercury cyanide	Hg (C N)$_2$	3.77, 13°	Bödeker. "
" "	"	4.0036, 14°.2	Clarke. A. J. S. (3), 16, 201.
" "	"	4.0262, 12°	Creighton. F. W. C.
" "	"	4.0026, 22°.2	Wittmann. "
" "	"	3.990	Schröder. Ber. 13, 1070.
" "	"	4.011	
Mercury oxycyanide	Hg O. Hg (C N)$_2$	4.419 } 23°.2	Clarke. A. J. S. (3), 16, 201.
" "	"	4.428 } 23°.2	
" "	"	4.437, 19°.2	Creighton. F. W. C.
Mercury chlorocyanide	Hg Cl (C N)	4.514, 26°	Wittmann. "
" "	"	4.531, 21°.7	
Mercury potassium cyanide.	K$_2$ Hg (C N)$_4$	2.4470, 21°.2	Creighton. "
" "	"	2.4551, 24°	
" "	"	2.4620, 21°.5	
Potassium chromocyanide	K$_4$ Cr (C N)$_6$	1.71	Moissan. Ann. (6), 4, 138.
Potassium manganicyanide.	K$_3$ Mn (C N)$_6$	1.821	Topsoë. B. S. C. 19, 246.
Sodium ferrocyanide	Na$_4$Fe(CN)$_6$. 12 H$_2$O	1.458	Bunsen.
Potassium ferrocyanide	K$_4$ Fe (C N)$_6$. 3 H$_2$ O	1.83	Watts' Dictionary.
" "	"	1.86	Schiff. J. 12, 41.
" "	"	2.052	Buignet. J. 14, 15.
Thallium ferrocyanide	Tl$_4$ Fe (C N)$_6$. 2 H$_2$ O	4.641	Lamy and Des Cloizeaux. Nature 1, 142.
Ammonium ferrocyanide with ammonium chloride.	Am$_4$ Fe (C N)$_6$. 2 Am Cl. 3 H$_2$ O.	1.490	Topsoë. C. C. 4, 76.
Potassium ferricyanide	K$_3$ Fe Cy$_6$	1.8004	Schabus. J. 3, 359.
" "	"	1.845	Wallace. J. 7, 378.
" "	"	1.849	Schiff. J. 12, 41.
" "	"	1.817	Buignet. J. 14, 15.
" "	"	1.849, 15°.3	Schröder. Dm. 1873.
" "	"	1.854, 15°.3	
" "	"	1.855, 15°	
" "	"	1.861, 15°	
Silver ammonio-ferricyanide.	4 Ag Fe (C N)$_6$. 6 N H$_3$. H$_2$ O.	2.42 } 14°.2	Gintl. J. 22, 321.
"		2.47 } 14°.2	
Sodium nitroprusside	Na$_4$ Fe$_2$ (C N)$_{10}$ (NO)$_2$. 4 H$_2$ O.	1.710	Schröder. Dm. 1873.
" "		1.716	
" "	"	1.6869, 25°	Dudley. F. W. C.
" "	"	1.713	Schröder. Ber. 13, 1070.
" "	"	1.731	
Potassium nickel cyanide	K$_2$ Ni (C N)$_4$. H$_2$ O	1.871, 14°.5	Dudley. F. W. C.
" " "	"	1.875, 11	
Potassium cobalticyanide	K$_3$ Co (C N)$_6$	1.906, 11°	Bödeker. B. D. Z.
" "	"	1.913	Topsoë. C. C. 4, 76.
Potassium platinocyanide	K$_2$Pt(CN)$_4$. 3 H$_2$O	2.4548, 16°	Dudley. F. W. C.
" "	"	2.5241, 13°	
Barium platinocyanide	BaPt (C N)$_4$	3.054	Schabus. J. 3, 360.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Samarium platinocyanide	$Sm_2Pt_3(CN)_{12}.18H_2O$	2.748 } 20°.8	Cleve. U. N. A. 1885.
" "	"	2.745 }	
Thorium platinocyanide	$ThPt_2(CN)_8.16H_2O$	2.460	Topsoë. B. S. C. 21, 118.
Potassium cyanate	K C N O	2.0475, 16°	Mendius. B. D. Z.
" "	"	2.056, 4°	Schröder. Ber. 12, 561.
Silver cyanate	Ag C N O	4.004, 16°	Mendius. B. D. Z.
" "	"	3.998	Schröder. Ber. 13, 1070.
Potassium sulphocyanide	K C N S	1.866 } 14°	Bödeker. B. D. Z.
" "	"	1.906 }	
" "	"	1.891	Schröder. Ber. 11, 2215.
Ammonium sulphocyanide.	Am C N S	1.299 } 13°	Dudley. F. W. C.
" "	"	1.316 }	
" "	"	1.316	Schröder. Ber. 11, 2215.
Lead sulphocyanide	$Pb(C N S)_2$	3.82	Schabus. J. 3, 362.
Phosphorus sulphocyanide	$P(C N S)_3$	1.625, 18°	Miquel. J. C. S. 32, 872.
Potassium chromium sulphocyanide.	$K_6Cr(CNS)_{12}.8H_2O$	1.7051, 17°.5	Dudley. F. W. C.
" "	"	1.7107, 16°	
Potassium platinsulphocyanide.	$K_2Pt(C N S)_6$	2.342, 18°	" "
"	"	2.370, 19°	
Potassium platinselenio-cyanide.	$K_2Pt(C N Se)_6$	3.377, 10°.2	" "
"	"	3.378, 12°.5	
Titanium nitrocyanide	$Ti(C N)_2.3Ti_3N_2$	5.30	Wollaston. P. T. 1823, 17.
" "	"	5.28001	Karsten. Schw. J. 65, 394.
Samarium sulphocyanide with mercuric cyanide.	$Sm(C N S)_3.3Hg(CN)_2.12H_2O.$	2.742, 18°	Cleve. U. N. A. 1885.
		2.749, 18°.4	

XLIII. MISCELLANEOUS INORGANIC COMPOUNDS.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nitrogen chlorophosphide	$P_3N_3Cl_6$	1.98	Gladstone and Holmes. J. 17, 148.
Mercury sulphide with copper chloride.	$HgS.CuCl_2$	6.29	Raschig. A. C. P. 228, 27.
Mercury chloride with ammonium dichromate.	$HgCl_2.Am_2Cr_2O_7$	3.1850, 18°	Heighway. F. W. C.
" " "	"	3.2336, 21°	
" " "	"	3.0824, 14°	Langenbeck. F. W. C.
Mercury cyanide with potassium chromate.	$2HgCy_2.K_2CrO_4$	3.564, 21°.8	H. Schmidt. F. W. C.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Potassium nitrato-sulphate.	$K_2 S O_4 . H N O_3$	2.38	Jacquelain. A. C. P. 32, 234.
Potassium phosphato-sulphate.	$K_2 S O_4 . H_3 P O_4$	2.296	" "
Hanksite	$4 Na_2 S O_4 . Na_2 C O_3$	2.562	Hidden. A. J. S. (3), 30, 135.
Phosgenite	$Pb_2 C O_3 Cl_2$	6.305	Rammelsberg. P. A. 85, 141.
Leadhillite	$Pb_4 S O_4 (C O_3)_3$	6.550	Gadolin. J. 6, 846.
"	"	6.526	Kokscharow. J. 6, 846.
Bastnäsite (Hamartite)	$(Ce La Di) (C O_3) F$	4.93	Nordenskiöld. J. 22, 1246.
"	"	5.18—5.20	Allen and Comstock. A. J. S. (3), 19, 390.
Parisite	$(Ce La Di)_2 (C O_3)_4 . Ca F_2$.	4.35	Bunsen. Dana's Min.
"	"	4.317	Dufrenoy. Dana's Min.

XLIV. ALLOYS.*

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
SODIUM AND POTASSIUM.		
Na K	.8993 } 0°, solid	Hagen. P. A. (2), 19, 486.
"	.8994 } 0°, solid	
"	.8905, 4°.5, fluid	
ZINC AND CALCIUM.†		
Zn_{12} Ca	6.369	v. Rath. Z. C. 12, 665.
"	6.3726	
ALLOYS OF MERCURY. AMALGAMS.		
Hg Zn	11.304	Calvert and Johnson. J. 12, 120.
$Hg_5 Cd_2$	12.615	Croockewitt. J. 1, 398.
Hg Pb	11.93	" "
"	12.284, 15°.7	Matthiessen. P. T. 1860, 177.
Hg Pb_2	11.979, 15°.9	" "
$Hg_3 Pb_2$	12.49, 17°	Bauer. J. 24, 317.
Hg_2 Pb	12.815, 15°.5	Matthiessen. P. T. 1860, 177.
Hg_2 Sn	11.3816	Kupffer. Ann. (2), 40, 285.
"	11.456, 11°.8	Holzmann. P. T. 1860, 177.

*This table contains only a moderate number of the many determinations which have been made relative to the specific gravity of alloys. Only those alloys have been admitted which allow of relatively simple chemical formulæ. Some of them are doubtless true chemical compounds, but in most cases the formulæ merely represent proportionate composition.
†See also Norton and Twitchell, A. C. J. 10, 70.

Alloy.	Specific Gravity.	Authority.
ALLOYS OF MERCURY. AMALGAMS—continued.		
Hg Sn	10.3447	Kupffer. Ann. (2), 40, 285.
"	10.369, 14°.2	Holzmann. P. T. 1860, 177.
"	10.255	Calvert and Johnson. J. 12, 120.
Hg Sn_2	9.3185	Kupffer. Ann. (2), 40, 285.
"	9.362, 9°.9	Holzmann. P. T. 1860, 177.
"	9.314	Calvert and Johnson. J. 12, 120.
Hg Sn_3	8.8218	Kupffer. Ann. (2), 40, 285.
"	8.805	Calvert and Johnson. J. 12, 120.
Hg Sn_4	8.510	" "
Hg Sn_5	8.312	" "
Hg Sn_6	8.151	" "
Hg Bi	11.208	" "
Hg Bi_2	10.693	" "
"	10.45	Croockewitt. J. 1, 393.
Hg Bi_3	10.474	Calvert and Johnson. J. 12, 120.
Hg Bi_4	10.350	" "
Hg Bi_5	10.240	" "
Hg_5 Ag_{12}. Native	12.703, 17°	Weiss. J. 36, 1819.
Hg_2 Au	15.412	Croockewitt. J. 1, 393.
ALLOYS OF ALUMINUM.		
Al Zn	4.532	Hirzel. J. 11, 138.
Al_6 Sn	3.583	" "
Al_5 Sn	3.791	" "
Al_4 Sn	4.025	" "
Al_3 Sn	4.276	" "
Al_2 Sn	4.744	" "
Al Sn	5.454	" "
Al Sn_2	6.264	" "
Al Sn_3	6.536	" "
Al_3 Cb	4.45—4.52	Marignac. J. 21, 215.
Al_3 Ta	7.02	Marignac. J. 21, 212.
Al Cr	4.9	Wöhler. J. 11, 160.
Al_4 W	5.58	Michel. J. 13, 130.
Al_3 Mn	3.402	Michel. J. 13, 131.
Al_6 Ni	3.647	Michel. J. 13, 132.
Al_{44} Cu	2.764	Hirzel. J. 11, 138.
Al_6 Cu	3.206	" "
Al_5 Cu	3.316	" "
Al_{11} Cu_3	3.579	" "
Al_7 Cu_2	3.724	" "
Al_3 Cu	3.972	" "
Al_9 Cu_4	4.148	" "
Al_2 Cu	4.355	" "
Al Cu	5.731	" "
Al Cu_2	6.946	" "
Al Cu_3	7.204	" "
Al Cu_4	7.534	" "
Al Cu_5	7.727	" "
Al Cu_6	7.751	" "
Al_2 Cu_{13}	7.884	" "
Al_2 Ag	6.733	Hirzel. J. 11, 137.
Al Ag	8.744	" "
Al Ag_2	9.376	" "

Alloy.	Specific Gravity.	Authority.
TIN AND ZINC.		
$Sn_2 Zn$	7.235	Croockewitt. J. 1, 394.
"	7.274	Calvert and Johnson. J. 12, 120.
$Sn Zn$	7.115	Croockewitt. J. 1, 394.
"	7.262	Calvert and Johnson. J. 12, 120.
$Sn Zn_2$	7.096	Croockewitt. J. 1, 394.
"	7.188	Calvert and Johnson. J. 12, 120.
$Sn Zn_3$	7.180	" "
$Sn Zn_4$	7.155	" "
$Sn Zn_5$	7.140	" "
$Sn Zn_{10}$	7.135	" "
TIN AND CADMIUM.		
$Sn_6 Cd$	7.434, 12°.7	Matthiessen. P. T. 1860, 177.
$Sn_4 Cd$	7.489, 15°	" "
$Sn_2 Cd$	7.690, 12°.9	" "
$Sn Cd$	7.904, 13°.2	" "
$Sn Cd_2$	8.139, 11°.1	" "
$Sn Cd_4$	8.336, 14°.5	" "
$Sn Cd_6$	8.432, 15°	" "
TIN AND LEAD.		
$Sn_{12} Pb$	7.628, 19°.4	Vicentini and Omodei. Bei. 12, 178. Melting point, 181°.
"	7.4849, 181°, s.	
"	7.3513, 212°, l.	
"	7.3209, 218°.7	
"	7.3041, 249°.4	
"	7.2726, 275°.3	
"	7.2490, 304°.2	
"	7.2294, 329°	
"	7.2088, 354°.8	
$Sn_6 Pb$	7.9210	Kupffer. Ann. (2), 40, 285.
"	7.927, 15°.2	Long. P. T. 1860, 177.
$Sn_5 Pb$	8.0279	Kupffer. Ann. (2), 40, 285.
"	8.093	Calvert and Johnson. J. 12, 120.
"	8.046	Riche. J. 15, 111.
$Sn_4 Pb$	8.1730	Kupffer. Ann. (2), 40, 285.
"	7.850	Thomson J. 1, 1040.
"	8.188, 16°	Long. P. T. 1860, 177.
"	8.196	Calvert and Johnson. J. 12, 120.
"	8.2347	Pillichody. J. 14, 279.
"	8.195	Riche. J. 15, 111.
"	8.177, 16°.7	Vicentini and Omodei. Bei. 12, 178. Melting point, 183°.3.
"	8.0735, 183°.3, s.	
"	7.8393, 209°, l.	
"	7.8090, 240°.4	
"	7.7917, 260°.4	
"	7.7586, 295°.5	
"	7.7323, 324°.7	
"	7.7032, 357°.6	
$Sn_7 Pb_2$	8.291	Riche. J. 15, 111.
$Sn_3 Pb$	8.3914	Kupffer. Ann. (2), 40, 285.
"	8.549	Thomson. J. 1, 1040.
"	9.025	Croockewitt. J. 1, 394.
"	8.418	Calvert and Johnson. J. 12, 120.

ALLOY.	SPECIFIC GRAVITY.	AUTHORITY.
TIN AND LEAD—contin'd.		
Sn_3 Pb	8.4087	Pillichody. J. 14, 279.
"	8.414	Riche. J. 15, 111.
"	8.400, 17°	
"	8.2949, 182°.9, s.	
"	8.0821, 182°.9, l.	
"	8.0755, 189°.7	
"	8.0431, 222°.9	
"	8.0150, 250°	Vicentini and Omodei. Bei. 12, 178. Melting point, 182°.9.
"	7.9896, 275°.9	
"	7.9695, 296°.3	
"	7.9446, 323°.9	
"	7.9212, 349°.5	
Sn_5 Pb_2	8.565	Riche. J. 15, 111.
Sn_2 Pb	8.7454	Kupffer. Ann. (2), 40, 285.
"	8.777, 13°.3	Regnault. P. A. 53, 67.
"	8.688	Thomson. J. 1, 1040.
"	8.779, 17°.2	Long. P. T. 1860, 177.
"	8.774	Calvert and Johnson. J. 12, 120.
"	8.7257	Pillichody. J. 14, 279.
"	8.766	Riche. J. 15, 111.
"	8.745, 15°.2	
"	8.6298, 182°.3, s.	
"	8.4509, 182°.3, l.	
"	8.4381, 189°	
"	8.4038, 207°	
"	8.3532, 242°.5	Vicentini and Omodei. Bei. 12, 178. Melting point, 182°.3.
"	8.3204, 272°.9	
"	8.2920, 303°.1	
"	8.2688, 325°.5	
"	8.2448, 351°.5	
Sn_3 Pb_2	9.0377	Pillichody. J. 14, 279.
"	9.046	Riche. J. 15, 111.
Sn_7 Pb_5	9.2773, 15°	Pohl. J. 3, 324.
Sn Pb	9.4263	Kupffer. Ann. (2), 40, 285.
"	9.387, 13°.3	Regnault. P. A. 53, 67.
"	9.288	Thomson. J. 1, 1040.
"	9.394	Croockewitt. J. 1, 394.
"	9.460, 15°.5	Long. P. T. 1860, 177.
"	9.458	Calvert and Johnson. J. 12, 120.
"	9.4330	Pillichody. J. 14, 279.
"	9.451	Riche. J. 15, 111.
"	9.422, 20°	
"	9.2809, 181°.8, s.	
"	9.180, 181°.8, l.	
"	9.1348, 201°.6	
"	9.0953, 216°.7	
"	9.0438, 233°	
"	8.9864, 248°.8	Vicentini and Omodei. Bei. 12, 178. Melting point, 181°.8.
"	8.9643, 262°.3	
"	8.9276, 293°	
"	8.8989, 317°	
"	8.8771, 337°	
"	8.8590, 356°	
Sn_3 Pb_4	9.6399, 15°	Pohl. J. 3, 323.
Sn_2 Pb_3	9.7971	Pillichody. J. 14, 279.
Sn Pb_2	10.0782	Kupffer. Ann. (2), 40, 285.

Alloy.	Specific Gravity.	Authority.
TIN AND LEAD—contin'd.		
$Sn\ Pb_2$	9.966	Croockewitt. J. 1, 394.
"	10.080, 14°.8	Long. P. T. 1860, 177.
"	10.105	Calvert and Johnson. J. 12, 120.
"	10.0520	Pillichody. J. 14, 279.
"	10.110	Riche. J. 15, 111.
$Sn\ Pb_3$	10.3868	Kupffer. Ann. (2), 40, 285.
"	10.421	Calvert and Johnson. J. 12, 120.
"	10.3311	Pillichody. J. 14, 279.
"	10.419	Riche. J. 15, 111.
$Sn\ Pb_4$	10.5551	Kupffer. Ann. (2), 40 285.
"	10.590, 14°.3	Long. P. T. 1860, 177.
"	10.587	Calvert and Johnson. J. 12, 120.
"	10.5957	Pillichody. J. 14, 279.
$Sn\ Pb_5$	10.751	Calvert and Johnson. J. 12, 120.
$Sn\ Pb_6$	10.815, 15°.6	Long. P. T. 1860, 177.
LEAD AND CADMIUM.		
$Cd_6\ Pb$	9.160, 13°.7	Holzmann. P. T. 1860, 177.
$Cd_4\ Pb$	9.353, 12°	" "
$Cd_2\ Pb$	9.755, 14°.7	" "
$Cd\ Pb$	10.246, 11°.7	" "
$Cd\ Pb_2$	10.656, 13°.4	" "
$Cd\ Pb_4$	10.950, 9°.2	" "
$Cd\ Pb_6$	11.044, 14°.8	" "
ANTIMONY AND TIN.		
$Sb_{12}\ Sn$	6.739, 16°.2	Long. P. T. 1860, 177.
$Sb_8\ Sn$	6.747, 13.°4	" "
$Sb_4\ Sn$	6.781, 13°.5	" "
$Sb_2\ Sn$	6.844, 13°.8	" "
$Sb\ Sn$	6.929, 15°.8	" "
$Sb\ Sn_2$	7.023, 15°.8	" "
$Sb\ Sn_3$	7.100, 10°.6	" "
$Sb\ Sn_5$	7.140, 19°	" "
$Sb\ Sn_{10}$	7.208, 18°.5	" "
$Sb\ Sn_{20}$	7.276, 19°.4	" "
$Sb\ Sn_{50}$	7.279, 20°	" "
$Sb\ Sn_{100}$	7.284, 20°.2	" "
ANTIMONY AND LEAD.		
$Sb_8\ Pb$	7.214	Riche. J. 15, 111.
$Sb_6\ Pb$	7.361	" "
$Sb_5\ Pb$	7.432	Calvert and Johnson. J. 12, 120.
$Sb_4\ Pb$	7.525	" "
"	7.622	Riche. J. 15, 111.
$Sb_3\ Pb$	7.830	Calvert and Johnson. J. 12, 120.
$Sb_2\ Pb$	8.330	" "
"	8.201, 13°.7	Matthiessen. P. T. 1860, 177.
"	8.233	Riche. J. 15, 111.
$Sb\ Pb$	8.953	Calvert and Johnson. J. 12, 120
"	8.989, 11°.7	Matthiessen. P. T. 1860, 177.
"	8.999	Riche. J. 15, 111.
$Sb_2\ Pb_3$	9.502	" "

Alloy.	Specific Gravity.	Authority.
ANTIMONY AND LEAD—continued.		
$Sb\ Pb_2$	9.723	Calvert and Johnson. J. 12, 120.
"	9.811, 14°.3	Matthiessen. P. T. 1860, 177.
"	9.817	Riche. J. 15, 111.
$Sb_2\ Pb_5$	10.040	" "
$Sb\ Pb_3$	10.136	Calvert and Johnson. J. 12, 120.
"	10.144, 15°.4	Matthiessen. P. T. 1860, 177.
"	10.211	Riche. J. 15, 111.
$Sb_2\ Pb_7$	10.344	" "
$Sb\ Pb_4$	10.387	Calvert and Johnson. J. 12, 120.
"	10.455	Riche. J. 15, 111.
$Sb_2\ Pb_9$	10.541	" "
$Sb\ Pb_5$	10.556	Calvert and Johnson. J. 12, 120.
"	10.586, 19°.3	Matthiessen. P. T. 1860, 177.
"	10.615	Riche. J. 15, 111.
$Sb_2\ Pb_{11}$	10.673	" "
$Sb\ Pb_6$	10.722	" "
$Sb_2\ Pb_{13}$	10.764	" "
$Sb\ Pb_7$	10.802	" "
$Sb\ Pb_{10}$	10.930, 19°.9	Matthiessen. P. T. 1860, 177.
$Sb\ Pb_{25}$	11.194, 20°.5	" "
BISMUTH AND ZINC.		
$Bi\ Zn$	9.046	Calvert and Johnson. J. 12, 120
BISMUTH AND CADMIUM.		
$Bi_{12}\ Cd$	9.766, 15°.4	Matthiessen. P. T. 1860, 177.
$Bi_8\ Cd$	9.737, 14°.7	" "
$Bi_4\ Cd$	9.669, 14°.8	" "
$Bi_2\ Cd$	9.554, 13°.4	" "
$Bi\ Cd$	9.388, 15°	" "
$Bi\ Cd_2$	9.195, 15°.5	" "
$Bi\ Cd_3$	9.079, 13°.1	" "
BISMUTH AND TIN.		
$Bi_{400}\ Sn$	9.815, 18°.1	Carty. P. T. 1860, 177.
$Bi_{180}\ Sn$	9.814, 19°.5	" "
$Bi_{120}\ Sn$	9.811, 19°	" "
$Bi_{88}\ Sn$	9.803, 22°.8	" "
$Bi_{60}\ Sn$	9.774, 23°	" "
$Bi_{20}\ Sn$	9.737, 19°.8	" "
$Bi_{12}\ Sn$	9.675, 15°.2	" "
$Bi_8\ Sn$	9.614, 12°.7	" "
$Bi_4\ Sn$	9.435, 15°	" "
"	9.434	Riche. J. 15, 112.
$Bi_2\ Sn$	9.178, 15°.9	Carty. P. T. 1860, 177.
"	9.145	Riche. J. 15, 111.
$Bi\ Sn$	8.759	Regnault. P. A. 53, 67.
"	8.772, 12°.6	Carty. P. T. 1860, 177.
"	8.754	Riche. J. 15, 112.
$Bi_2\ Sn_3$	8.506	" "
$Bi\ Sn_2$	8.085	Regnault. P. A. 53, 67.
"	8.339, 13°.9	Carty. P. T. 1860, 177.

Alloy.	Specific Gravity.	Authority.
BISMUTH AND TIN—continued.		
Bi Sn_2	8.327	Riche. J. 15, 112.
Bi_2 Sn_5	8.199	" "
Bi Sn_3	8.112, 14°.2	Carty. P. T. 1860, 177.
"	8.097	Riche. J. 15, 112.
Bi_2 Sn_7	8.017	" "
Bi Sn_4	7.943, 20°	Carty. P. T. 1860, 177.
Bi Sn_{22}	7.438, 19°.9	" "
BISMUTH AND LEAD.		
Bi_{60} Pb	9.844, 21°.7	Carty. P. T. 1860, 177.
Bi_{48} Pb	9.845, 21°.6	" "
Bi_{40} Pb	9.850, 21°.3	" "
Bi_{24} Pb	9.887, 20°.6	" "
Bi_{20} Pb	9.893, 19°.5	" "
Bi_{16} Pb	9.934, 21°.1	" "
Bi_{12} Pb	9.973, 15°	" "
Bi_8 Pb	10.048, 10°.7	" "
"	8.6	E. Wiedemann. P. A. (2), 20, 240.
Bi_4 Pb	10.235, 12°.5	Carty. P. T. 1860, 177.
"	10.232	Riche. J. 15, 111.
"	9.73	E. Wiedemann. P. A. (2), 20, 239.
Bi_2 Pb	10.538, 14°	Carty. P. T. 1860, 177.
"	10.519	Riche. J. 15, 111.
"	10.96	E. Wiedemann. P. A. (2), 20, 239.
Bi Pb	10.956, 14°.9	Carty. P. T. 1860, 177.
"	10.931	Riche. J. 15, 111.
"	11.03	E. Wiedemann. P. A. (2), 20, 237.
Bi_4 Pb_5	11.038	Riche. J. 15, 111.
Bi_2 Pb_3	11.108	" "
Bi_4 Pb_7	11.166	" "
Bi Pb_2	11.141, 12°.7	Carty. P. T. 1860, 177.
"	11.194	Riche. J. 15, 111.
"	11.4	E. Wiedemann. P. A. (2), 20, 236.
Bi_2 Pb_5	11.209	Riche. J. 15, 111.
Bi Pb_3	11.161, 14°.8	Carty. P. T. 1860, 177.
"	11.225	Riche. J. 15, 111.
Bi_2 Pb_7	11.235	" "
Bi Pb_4	11.188, 20°.8	Carty. P. T. 1860, 177.
Bi Pb_5	11.196, 20°.2	" "
Bi Pb_{12}	11.280, 22°.5	" "
Bi Pb_{50}	11.331, 23°	" "
BISMUTH AND ANTIMONY.		
Bi_6 Sb	9.435, 9°.4	Holzmann. P. T. 1860, 177.
Bi_5 Sb	9.369	Calvert and Johnson. J. 12, 120.
Bi_4 Sb	9.276	" "
"	9.277, 12°.1	Holzmann. P. T. 1860, 177.
Bi_3 Sb	9.095	Calvert and Johnson. J. 12, 120.
Bi_2 Sb	8.859	" "
"	8.886, 14°	Holzmann. P. T. 1860, 177.
Bi Sb	8.364	Calvert and Johnson. J. 12, 120.
"	8.392, 11°	Holzmann. P. T. 1860, 177.
Bi Sb_2	7.829	Calvert and Johnson. J. 12, 120.

Alloy.	Specific Gravity.	Authority.
BISMUTH AND ANTIMONY—continued.		
Bi Sb_2	7.864, 9°.4	Holzmann. P. T. 1860, 177.
Bi Sb_3	7.561	Calvert and Johnson. J. 12, 120.
Bi Sb_4	7.370	" "
Bi Sb_5	7.271	" "
IRON AND TIN.		
Fe Sn_5. Cryst. furnace product.	7.534	Rammelsberg.
Fe Sn_2	7.446	Noellner. J. 13, 188.
Fe_3 Sn	8.733	Lassaigne.
IRON AND NICKEL.		
Awaruite. Ni_2 Fe	8.1	Ulrich. N. J. 1888, 209.
COPPER AND ZINC.*		
Cu_{10} Zn	8.605	Mallet. D. J. 85, 378.
Cu_9 Zn	8.607	" "
Cu_8 Zn	8.633	" "
Cu_7 Zn	8.587	" "
Cu_6 Zn	8.591	" "
Cu_5 Zn	8.415	" "
"	8.673	Calvert and Johnson. J. 12, 120.
Cu_4 Zn	8.448	Mallet. D. J. 85, 378.
"	8.650	Calvert and Johnson. J. 12, 120.
Cu_3 Zn	8.397	Mallet. D. J. 85, 378.
"	8.576	Calvert and Johnson. J. 12, 120.
Cu_2 Zn	8.299	Mallet. D. J. 85, 378.
"	8.392	Croockewitt. J. 1, 394.
"	8.488	Calvert and Johnson. J. 12, 120.
Cu_3 Zn_2	8.224	Croockewitt. J. 1, 394.
Cu Zn	8.230	Mallet. D. J. 85, 378.
"	7.808	Calvert and Johnson. J. 12, 120.
Cu_3 Zn_5	7.939	Croockewitt. J. 1, 394.
Cu Zn_2	8.283	Mallet. D. J. 85, 378.
"	7.859	Calvert and Johnson. J. 12, 120.
Cu_8 Zn_{17}	7.721	Mallet. D. J. 85, 378.
Cu_8 Zn_{18}	7.836	" "
Cu_8 Zn_{19}	8.019	" "
Cu_8 Zn_{20}	7.603	" "
Cu_8 Zn_{21}	8.058	" "
Cu_8 Zn_{22}	7.882	" "
Cu_8 Zn_{23}	7.443	" "
Cu Zn_3	7.449	" "
"	7.736	Calvert and Johnson. J. 12, 120.
Cu Zn_4	7.371	Mallet. D. J. 85, 378.
"	7 445	Calvert and Johnson. J. 12, 120.
Cu Zn_5	6.605	Mallet. D. J. 85, 378.
"	7.442	Calvert and Johnson. J. 12, 120.

*See also the Report of the (U. S.) Board on Testing Iron, Steel, and other Metals. Washington, Government Printing Office, 1881.

Alloy.	Specific Gravity.	Authority.
COPPER AND TIN.		
Cu_{96} Sn	8.564	Thurston's Report, 295.
Cu_{48} Sn	8.649	" " "
Cu_{25} Sn	8.820	Calvert and Johnson. J. 12, 120.
Cu_{24} Sn	8.694	Thurston's Report, 295.
Cu_{20} Sn	8.793	Calvert and Johnson. J. 12, 120.
Cu_{15} Sn	8.825	" "
"	8.84	Riche. J. 21, 270.
"	8.80	Riche. J. 23, 1100.
Cu_{12} Sn	8.681	Thurston's Report, 295.
Cu_{10} Sn	8.561	Mallet. D. J. 85, 378.
"	8.832	Calvert and Johnson. J. 12, 120.
"	8.87	Riche. J. 21, 270
"	8.83	Riche. J. 23, 1100.
Cu_9 Sn	8.462	Mallet. D. J. 85, 378.
Cu_8 Sn	8.459	" "
"	8.84	Riche. J. 21, 270.
"	8.86	Riche. J. 23, 1100.
Cu_7 Sn	8.728	Mallet. D. J. 85, 378.
"	8.72	Riche. J. 21, 270.
"	8.90	Riche. J. 23, 1100.
Cu_6 Sn	8.750	Mallet. D. J. 85, 378.
"	8.65	Riche. J. 21, 270.
"	8.91	Riche. J. 23, 1100.
"	8.565	Thurston's Report, 295.
Cu_5 Sn	8.575	Mallet. D. J. 85, 378.
"	8.965	Calvert and Johnson. J. 12, 120.
"	8.62	Riche. J. 21, 270.
"	8.87	Riche. J. 23, 1100.
Cu_4 Sn	8.400	Mallet. D. J. 85, 378.
"	8.948	Calvert and Johnson. J. 12, 120.
"	8.77	Riche. J. 21, 270.
"	8.80	Riche. J. 23, 1100.
"	8.938	Thurston's Report, 295.
Cu_3 Sn	8.539	Mallet. D. J. 85, 378.
"	8.954	Calvert and Johnson. J. 12, 120.
"	8.91	Riche. J. 21, 270.
"	8.96	Riche. J. 23, 1100.
"	8.970	Thurston's Report, 295.
Cu_{12} Sn_5	8.682	" " "
Cu_2 Sn	8.416	Mallet. D. J. 85, 378.
"	8.512	Croockewitt. J. 1, 394.
"	8.533	Calvert and Johnson. J. 12, 120.
"	8.15	Riche. J. 21, 270.
"	8.57	Riche. J. 23, 1100.
"	8.560	Thurston's Report, 295.
Cu_{12} Sn_7	8.442	" " "
Cu_3 Sn_2	8.06	Riche. J. 21, 270.
"	8.30	Riche. J. 23, 1100.
"	8.312	Thurston's Report, 295.
Cu_4 Sn_3	8.302	" " "
Cu_6 Sn_5	8.182	" " "
Cu Sn	8.656	Mallet. D. J. 85, 378.
"	8.072	Croockewitt. J. 1, 394.
"	7.992	Calvert and Johnson. J. 12, 120.
"	7.90	Riche. J. 21, 270.
"	8.12	Riche. J. 23, 1100

Alloy.	Specific Gravity.	Authority.
COPPER AND TIN—continued.		
Cu Sn	8.013	Thurston's Report, 295.
$Cu_3 Sn_4$	7.948	" " "
$Cu_3 Sn_5$	7.835	" " "
$Cu Sn_2$	7.387	Mallet. D. J. 85, 378.
" Cryst.	7.53	Miller. P. A. 120, 55.
"	7.738	Calvert and Johnson. J. 12, 120.
"	7.83	Riche. J. 21, 270.
"	7.74	Riche. J. 23, 1100.
"	7.770	Thurston's Report, 295.
$Cu_3 Sn_7$. Furnace product.	6.994	Rammelsberg. P. A. 120, 54.
$Cu_2 Sn_5$	7.652	Croockewitt. J. 1, 394.
$Cu Sn_3$	7.447	Mallet. D. J. 85, 378.
"	7.606	Calvert and Johnson. J. 12, 120.
"	7.44	Riche. J. 21, 270.
"	7.53	Riche. J. 23, 1100.
"	7.657	Thurston's Report, 295.
$Cu Sn_4$	7.472	Mallet. D. J. 85, 378.
"	7.558	Calvert and Johnson. J. 12, 120.
"	7.31	Riche. J. 21, 270.
"	7.50	Riche. J. 23, 1100.
"	7.552	Thurston's Report, 295.
$Cu Sn_5$	7.442	Mallet. D. J. 85, 378.
"	7.517	Calvert and Johnson. J. 12, 120.
"	7.28	Riche. J. 21, 270.
"	7.52	Riche. J. 23, 1100.
"	7.487	Thurston's Report, 295.
$Cu Sn_{12}$	7.360	" " "
$Cu Sn_{48}$	7.305	" " "
$Cu Sn_{96}$	7.299	" " "
COPPER AND LEAD.		
Cu Pb	10.375	Croockewitt. J. 1, 394.
$Cu_2 Pb_3$	10.753	" "
COPPER AND ANTIMONY.		
$Cu_{11} Sb_2$	8.829	Laist and Norton. A. C. J. 10, 60.
" Horsfordite	8.812	
$Cu_4 Sb$	8.871	Kamenski.* P. M. (5), 17, 274.
$Cu_2 Sb$	8.339	" "
Cu Sb	7.990	Calvert and Johnson. J. 12, 120.
COPPER AND BISMUTH.		
Cu Bi	9.634	Calvert and Johnson. J. 12, 120.
SILVER AND TIN.		
$Ag_4 Sn$	9.953, 14°.8	Holzmann. P. T. 1860, 177.
$Ag_2 Sn$	9.507, 12°.9	" "
Ag Sn	8.828, 13°.8	" "
$Ag Sn_2$	8.223, 16°.3	" "

* Kamenski gives data for seventeen other Cu Sb alloys.

Alloy.	Specific Gravity.	Authority.
SILVER AND TIN—continued.		
Ag Sn_3	7.936, 19°.3	Holzmann. P. T. 1860, 177.
Ag Sn_5	7.551, 18°.8	" "
Ag Sn_6	7.666, 18°.4	" "
Ag Sn_{18}	7.421, 18°.6	" "
SILVER AND LEAD.		
Ag_4 Pb	10.800, 13°.5	Matthiessen. P. T. 1860, 177.
Ag_2 Pb	10.925, 13°.8	" "
Ag Pb	10.054, 12°.5	" "
Ag Pb_2	11.144, 18°.2	" "
Ag Pb_4	11.196, 21°	" "
Ag Pb_{10}	11.285, 22°.2	" "
Ag Pb_{25}	11.334, 20°.6	" "
SILVER AND COPPER.*		
Ag_3 Cu_2	9.9045	Levol. J. 5, 768.
" Solid	9.9045	Roberts. C. N. 31, 148.
" Molten	9.0554	
GOLD AND TIN.		
Au_4 Sn	16.367, 15°.4	Holzmann. P. T. 1860, 177.
Au_2 Sn	14.244, 14°.2	" "
Au Sn	11.833, 14°.6	" "
Au_2 Sn_3	10.794, 23°.6	" "
Au Sn_2	10.168, 23°.7	" "
Au_2 Sn_5	9.715, 22°.4	" "
Au Sn_3	9.405, 23°.7	" "
Au Sn_4	8.931, 25°.6	" "
Au Sn_6	8.470, 23°.1	" "
Au Sn_9	8.118, 22°.4	" "
Au Sn_{15}	7.801, 22°.8	" "
Au Sn_{50}	7.441, 22°.9	" "
GOLD AND LEAD.		
Au_4 Pb	17.013, 14°.3	Matthiessen. P. T. 1860, 177.
Au_2 Pb	15.603, 14°.5	" "
Au Pb	14.466, 14°.3	" "
Au Pb_2	13.306, 22°.1	" "
Au Pb_3	12.737, 21°.3	" "
Au Pb_4	12.445, 21°.6	" "
Au Pb_5	12.274, 19°.4	" "
Au Pb_{10}	11.841, 23°.3	" "
GOLD AND BISMUTH.		
Au_2 Bi	14.844, 16°	Holzmann. P. T. 1860, 177.
Au Bi	13.403, 16°.5	" "
Au Bi_2	12.067, 16	" "
Au Bi_4	11.025, 23°	" "

* See Karmarsch, Beiblätter 2, 194, for sixteen Ag Cu alloys.

Alloy.	Specific Gravity.	Authority.
GOLD AND BISMUTH—continued.		
Au Bi_8	10.452, 21°.4	Holzmann. P. T. 1860, 177.
Au Bi_{20}	10.076, 18°.7	" "
Au Bi_{40}	9.942, 21°.2	" "
Au Bi_{90}	9.872, 21°	" "
GOLD AND COPPER.		
Au_6 Cu	17.9840	Roberts. Bei. 2, 827.
Au_3 Cu	17.1653	" "
Au_2 Cu	16.4832	" "
GOLD AND SILVER.		
Au_6 Ag	18.041, 18°.1	Matthiessen. P. T. 1860, 177.
Au_4 Ag	17.540, 12°.3	" "
Au_2 Ag	16.354, 13°	" "
Au Ag	14.870, 13°	" "
Au Ag_2	13.432, 14°.3	" "
Au Ag_4	12.257, 14°.7	" "
Au Ag_8	11.760, 13°.1	" "
PALLADIUM AND LEAD.		
Pd_3 Pb	11.225	Bauer. J. 24, 317.
PLATINUM AND LEAD.		
Pt Pb	15.77	Bauer. Z. C. 14, 48.
IRIDIUM AND OSMIUM.		
Ir Os. Newjanskite	19.386—19.471	Berzelius. Dana's Min.
Ir Os_4. Sisserskite	21.118	" "
TRIPLE ALLOYS.*		
Cd Pb_3 Bi_4	10.563	v. Hauer. J. 18, 236.
Cd_2 Pb_7 Bi_8	10.732	" "
Pb Sn_2 Bi	9.194, 11°	Regnault. P. A. 53, 67.
Pb Sn_2 Bi_2	9.253, 20°	" "
Pb_4 Sn_6 Bi_7. Rose's alloy.	9.5125, 4°	Spring. Ann. (5), 7, 196.
Pb_8 Sn_{10} Bi_{13}. Darcet's "	9.6401, 4°	" "
Sn_2 Sb Bi	7.883, 20°	Regnault. P. A. 53, 67.
Cu_3 Ni Sb_3. Furnace product.	8.004	Sandberger. J. 11, 202.
QUADRUPLE ALLOYS.		
Cd Sn Pb Bi_2	9.765	v. Hauer. J. 18, 236.
Cd Sn_2 Pb_2 Bi_4	9.784	" "
Cd_2 Sn_2 Pb Bi_4. Wood's alloy.	9.1106, 4°	Spring. Ann. (5), 7, 196.
Cd_3 Sn_4 Pb_4 Bi_8	9.725	v. Hauer. J. 18, 236.
Cd_4 Sn_5 Pb_5 Bi_{10}	9.685	" "
Cd_4 Sn_5 Pb_6 Bi_{11}. Lipowitz' alloy.	9.7244, 4°	Spring. Ann. (5), 7, 196.

* For the triple alloys of Cu Sn Zn see Thurston's Report. For many amalgams see Joule, J. C. S., vol. 16, 1863. For alloys of platinum and gold see Prinsep, P. T. 1828.

XLV. HYDROCARBONS.

1st. Paraffins. $C_n H_{2n+2}$.

Name.	Formula.	Sp. Gravity.	Authority.
Methane. Liquefied	CH_4	.87	Wroblevsky. C. R. 99, 136.
" "	"	.414	Olszewski. P. A. (2), 31, 78.
" "	"	.415 —164°	
" "	"	.416	
Propane	C_3H_8	.613, —25°	Lefebvre. J. 21, 329.
Butane	C_4H_{10}	.600, 0°	Pelouze and Cahours. J. 16, 524.
"	"	.600, 0°	Ronalds. J. 18, 507.
"	"	.624, —1°	Lefebvre. J. 21, 329.
Normal pentane. (B. 39°).	C_5H_{12}	.636, 17°	Schorlemmer. J. 15, 386.
" "	"	.6263, 17°	Schorlemmer. J. 19, 527.
" "	"	.626, 14°	Cahours and Demarçay. C. R. 80, 1569.
" "	"	.6267, 14°	Lachowicz. A. C. P. 220, 191.
" "	"	.624, 11°.5	Gladstone. Bei. 9, 249.
" "	"	.6323, 17°	Norton and Andrews. A. C. J. 8, 7.
Isopentane. (B. 30°)	"	.6415, 11°.2	Frankland. J. 8, 481.
"	"	.6385, 14°.2	
"	"	.628, 18°	Pelouze and Cahours. J. 16, 527.
"	"	.6375, 13°	Just. A. C. P. 220, 153.
"	"	.6282, 13°.7	Schiff. G. C. I, 13, 177.
"	"	.6132, 30°.5	
"	"	.6402, 0°	Bartolli and Stracciati. Bei. 9, 697.
"	"	.6111, 30°	
Normal hexane. (B. 69°).	C_6H_{14}	.6745, 18°	Williams. J. 10, 418.
" "	"	.669, 16°	Pelouze and Cahours. J. 15, 410.
" "	"	.678, 15°.5	Schorlemmer. J. 15, 386.
" "	"	.6617, 17°.5	Dale. J. 17, 331.
" "	"	.6645, 16°.5	Wanklyn and Erlenmeyer. J. 16, 521.
" "	"	.6630, 17°	Schorlemmer. A. C. P. 161, 263.
" "	"	.689, 0°	Warren. J. 21, 330.
" "	"	.6641, 18°	Thorpe and Young. A. C. P. 165, 1.
" "	"	.6620, 19°.5	
" "	"	.667, 13°	Cahours and Demarçay. C. R. 80, 1570.
" "	"	.6199, 60°.8	Ramsay. J. C. S. 35, 468.

Name.	Formula.	Sp. Gravity.	Authority.
Normal hexane	C_6H_{14}	.6753, 0°	Zander. A. C. P. 214, 181.
" "	"	.6129, 69°	
" "	"	.6985, 14°	Lachowicz. A. C. P. 220, 192.
" "	"	.6681, 10°.8	Schiff. G. C. I. 13, 177.
" "	"	.6142, 68°.6	
" "	"	.6143, 68°.6	
" "	"	.6603, 20°	Brühl. A. C. P. 200, 183.
" "	"	.6950, 0°	Bartoli and Stracciati. Bei. 9, 697.
" "	"	.6343, 68°	
" "	"	.6745, 18°	Norton and Andrews. A. C. J. 8, 7.
Isohexane. (B. 62°)	"	.7011, 0°	Wurtz. J. 8, 576.
"	"	.676, 0°	Warren. J. 21, 330.
Hexane. B. 48°—62°	"	.6317, 25°.5	Gladstone. Bei. 9. 249.
" B. 53°—60°	"	.6413, 25°	" "
Methyl-diethyl-methane. (B. 64°.)	"	.6765, 20°.5	Wislicenus. A. C. P. 219, 315.
Tetramethyl-ethane, or diisopropyl. (B. 58°.)	"	.6769, 10°	Schorlemmer. J. 20, 566.
	"	.6701, 17°.5	
" "	"	.6569, 29°	
" "	"	.668, 0°	Riche. Ann. (3), 59, 426.
" "	"	.6829, 0°	Zander. A. C. P. 214, 181.
" "	"	.6286, 58°	
Hexane from suberic acid. B. 78°.	"	.671, 26°	Riche. Ann. (3), 59, 426.
Normal heptane. (B. 98°.4) From coal oil.	C_7H_{16}	.709, 17°.5	Schorlemmer. J. 15, 386.
" " " petroleum	"	.7122, 16°	Schorlemmer. J. 16, 532.
" " " azelaic acid	"	.6851, 17°.5	Dale. J. 17, 381.
" " " " "	"	.6840, 20°.5	Schorlemmer and Dale. A. C. P. 136, 266.
" "	"	.7085, 0°	Warren and Storer. J. 21, 331.
" "	"	.693, 12°	Cahours and Demarçay. C. R. 80, 1570.
" " From petroleum.	"	.6967, 19°	Beilstein and Kurbatow. Ber. 13, 2028.
" "	"	.6915, 18°	Thorpe and Young. A. C. P. 165, 1.
" "	"	.6910, 19°	
" " (Abietene)	"	.694	Wenzell. C. N. 39, 182.
" " "	"	.70048, 0°	Thorpe. J. C. S. 37, 371.
" " "	"	.61386, 98°.43	
" "	"	.7176, 20°	Lachowicz. A. C. P. 220, 193.
" "	"	.7291, 20°	Lachowicz. A. C. P. 220, 203.
" "	"	.7028, 14°	Lachowicz. A. C. P. 220, 204.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isoheptane*, ethyl-amyl, or dimethyl-butyl-methane. B. 90°.3.	C_7H_{16}	.7069, 0°	Wurtz. J. 8, 576.
"	"	.6819, 17°.5	Schorlemmer. A. C. P. 136, 259.
"	"	.6795, 20°	
"	"	.6789, 19°	Schorlemmer. A. C. P. 136, 264.
"	"	.7259, 0°	Schorlemmer. A. C. P. 136, 269. From petroleum.
"	"	.7148, 15°	
"	"	.6999, 32°	
"	"	.6867, 48°	
"	"	.6833, 18°.4	Grimshaw. A. C. P. 166, 163.
"	"	.69692, 0°	Thorpe. J. C. S. 37, 371.
"	"	.61606, 90°.3	
"	"	.6060, 91°	Ramsay. J. C. S. 35, 463.
Methyl-ethyl-propyl-methane. (B. 91°.)	"	.6895, 20°	Just. A. C. P. 220, 155.
Triethyl-methane. (B. 96°)	"	.689, 27°	Ladenburg. B. S. C. 18, 548.
Dimethyl-diethyl-methane. (B. 86°—87°.)	"	.7111, 0°	Friedel and Ladenburg. J. P. C. 101, 315.
	"	.6958, 20°.5	
" From petroleum	"	.709, 16°	Schorlemmer. A. C. P. 166, 172.
Heptane from petroleum	"	.7328, 0°	Bartoli and Straciati. Bei. 9, 697.
" (B. 92°—94°)	"	.6473, 92°–94°	
" "	"	.7303, 0°	
" "	"	.6462, 92°–94°	
Normal octane. (B. 125°.5)	C_8H_{18}	.6945, 18°	Williams. J. 10, 418.
" "	"	.7083, 12°.5	Schorlemmer.
" "	"	.7032, 17°	Schorlemmer. A. C. P. 161, 263.
" "	"	.723, 0°	Riche. J. 13, 248.
" "	"	.721, 10°	
" "	"	.719, 17°.5	Schorlemmer. J. 15, 386.
" "	"	.726, 15°	Pelouze and Cahours. J. 16, 524.
" "	"	.728, 0°	Wurtz. J. 16, 509.
" "	"	.7207, 15°.5	Thorpe and Young. Two lots. A. C. P. 165, 1.
" "	"	.7165, 15°.6	
" "	"	.723, 13°	Cahours and Demarçay. C. R. 80, 1571.
" "	"	.71883, 0°	Thorpe. J. C. S. 37, 371.
" "	"	.61077, 125°.46	
" " From conicein.	"	.712, 11°	Hofmann. Ber. 18, 13.
Tetramethyl-butane, or diisobutyl. (B. 108°.53.)	"	.6940, 18°	Kolbe. J. 1. 559.
"	"	.7057, 0°	Wurtz. J. 8, 576.
"	"	.7135, 0°	Kopp. A. C. P. 95, 307.
"	"	.7001, 16°.4	

* For a mixture of heptane and isoheptane from petroleum, B. 92°—94°, Pelouze and Cahours give a sp. g. of .699, 16°.

Name.	Formula.	Sp. Gravity.	Authority.
Tetramethyl-butane, or diisobutyl. (B. 108°.53.)	C_8H_{18}	.7091, 0°	Williams. J. C. S. 35, 125.
"	"	.7085, 0°	
"	"	.7015, 10°	
"	"	.6931, 20°	
"	"	.686, 30°	
"	"	.677, 40°	
"	"	.669, 50°	
"	"	.626, 100°	
"	"	.698, 16°.5	Schorlemmer. J. 20, 567.
"	"	.6712, 49°	
"	"	.7111, 0°	Thorpe. J. C. S. 37, 371.
"	"	.61549, 108°.53	
"	"	.7001, 12°.1	Schiff. G. C. I. 13, 177.
"	"	.6166 } 107°.8	
"	"	.6167 } 107°.8	
Octane from petroleum. (B. 121°.)	"	.732, 12°	Lemoine. B. S. C. 41, 161.
" " " (B. 116°—	"	.7463, 0°	Bartoli and Straciati. Bei. 9, 697.
" " " 118°)	"	.6536, 116°-118°	
Normal nonane. (B. 149°)	C_9H_{20}	.741	Pelouze and Cahours.* J. 16, 524.
" "	"	.744, 18°	Cahours and Demarçay.* C. R. 80, 1571.
" "	"	.7279, 13°.5	Thorpe and Young. A. C. P. 165, 1.
" "	"	.7330, 0°	Krafft. Ber. 15, 1687.
" "	"	.7228, 13°.5	
" "	"	.7217, 15°	
" "	"	.7177, 20°	
" "	"	.6541, 99°.1	
" "	"	.7124, 21°	Lachowicz. A. C. P. 220, 194.
" " (B. 136°)	"	.742, 12°	Lemoine.* B. S. C 41, 161.
" " (B. 130°)	"	.743, 0°	" "
" " "	"	.734, 12°.7	
" " "	"	.731, 16°	
" " "	"	.725, 24°	
" " (B. 136°	"	.7623, 0°	Bartoli and Straciati.* Bei. 9, 697.
" " —138°.)	"	.6492, 136–138°	
Tetramethyl pentane, or butyl-amyl. (B. 132.)	"	.7247, 0°	Wurtz. J. 8, 570.
Normal decane. (B. 167°)	$C_{10}H_{22}$	.7394, 13°.5	Thorpe and Young. A. C. P. 165, 1.
" " (B. 170°)	"	.7562, 15°	Jacobson. A. C. P. 184, 202.
" "	"	.7516, 22°	
" " (B. 173°)	"	.7456, 0°	Krafft. Ber. 15, 1687.
" "	"	.7452, 0°	
" "	"	.7342, 15°	
" "	"	.7304, 20°	
" "	"	.6690, 99°.3	
" "	"	.73097, 18°	Lachowicz. A. C. P. 220, 180.
Diisoamyl. (B. 155°)	"	.7704, 11°	Frankland. J. 3, 479.

* Preparations from petroleum, boiling at 130° to 140°, and doubtless containing admixed isomers

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diisoamyl. (B. 158°)	$C_{10}H_{22}$	.7418, 0°	Wurtz. J. 8, 573.
"	"	.7282, 20°	
" (B. 159°)	"	.7865, 18°	Williams. J. 10, 418.
" (B. 156°)	"	.753, 0°	Wurtz. J. 16, 510.
" (B. 159°.4)	"	.7358, 9°.8	Schiff. G. C. I. 13, 177.
"	"	.6126, 159°.4	
" (B. 160°)	"	.7463, 22°	Just. A. C. P. 220, 156.
" (B. 157°.1)	"	.72156, 22°	Lachowicz. A. C. P. 220, 172.
Decane. (B. 160°)	"	.757, 16°	Pelouze and Cahours.* J. 16, 524.
" (B. 159°)	"	.758, 14°	Cahours and Demarçay.* C. R. 80, 1571.
" (B. 155°—160°)	"	.760	Cloez.† C. R. 85, 1003.
" (B. 162°—163°)	"	.7324, 20°	Lachowicz.‡ A. C. P. 220, 195.
" (B. 152°—153°)	"	.7187, 21°	
"	"	.764, 0°	Lemoine.* B. S. C. 41, 161.
"	"	.753, 15°.6	
"	"	.751, 17°	
"	"	.739, 33°.5	
"	"	.7711, 0°	Bartoli and Straciati.* Bei. 9, 697.
"	"	.6475, 158–162°	
Undecane. (B. 181°)	$C_{11}H_{24}$	.766	Pelouze and Cahours.* J. 16, 524.
" (B. 177°)	"	.770, 14°	Cahours and Demarçay.* C. R. 80, 1571.
" (B. 179°)	"	.769	Cloez.† C. R. 85, 1003.
" (B. 180°–182°)	"	.7816, 0°	Bartoli and Straciati.* Bei. 9, 697.
" "	"	.6448, 180–182°	
Normal undecane. (B. 194°.5.)	"	.7560, 0°	Krafft. Ber. 15, 1687. Melts at —26°.5.
" "	"	.7557, 0°	
" "	"	.7448, 15°	
" "	"	.7411, 20°	
" "	"	.6816, 99°	
Dodecane. (B. 202°)	$C_{12}H_{26}$	.7574, 0°	Wurtz. J. 8, 576.
" "	"	.7568, 18°	Williams. J. 10, 418.
" (B. 198°)	"	.778, 20°	Pelouze and Cahours.* J. 16, 524.
" (B. 200°)	"	.784, 14°	Cahours and Demarçay.* C. R. 80, 1571.
" (B. 196°.5)	"	.782	Cloez.† C. R. 85, 1003.
" (B. 201°)	"	.7788, 17°	Schorlemmer. A. C. P. 161, 263.
" (B. 198°–200°)	"	.7915, 0°	Bartoli and Straciati.* Bei. 9, 697.
" "	"	.6442, 198–200°	
Normal dodecane.	"	.7655, 0°	Krafft. Ber. 15, 1687.
" " (B. 214°.5)	"	.7548, 15°	
" "	"	.7511, 20°	
" "	"	.6930, 99°.1	

* From petroleum. Doubtless a mixture of isomers.
† From hydrogen evolved from cast iron. Constitution undetermined.
‡ Two isomers from Galician petroleum. Constitution undetermined.

Name.	Formula.	Sp. Gravity.	Authority.
Tridecane. (B. 219°)	$C_{13}H_{28}$	.796, 17°	Pelouze and Cahours.* J. 16, 524.
" (B. 217°.5)	"	.793	Cloez.† C. R. 85, 1003.
" (B. 218°–220°)	"	.8016, 0°	Bartoli and Straciati.* Bei. 9, 697.
" "	"	.6469, 218–220°	
Normal tridecane. (B. 234°)	"	.7716, 0°	Krafft. Ber. 15, 1687.
" "	"	.7713, 0°	
" "	"	·7608, 15°	
" "	"	.7571, 20°	
" "	"	.7008, 99°	
Tetradecane. (B. 238°)	$C_{14}H_{30}$	.809, 20°	Pelouze and Cahours.* J. 16, 524.
" (B. 236°)	"	.812	Cloez.† C. R. 85, 1003.
" (B. 236°–240°)	"	.8129, 0°	Bartoli and Straciati.* Bei. 9, 697.
" "	"	.6412, 236–240°	
Normal tetradecane.	"	.7753, 4°.5	Krafft. Ber. 15, 1687. Melts at 4°.5.
" " (B. 252°.5)	"	.7750, 5°	
" "	"	.7715, 10°	
" "	"	.7681, 15°	
" "	"	.7645, 20°	
" "	"	.7087, 99°.2	
" "	"	.7738, 5°.4	Krafft. Ber. 19, 2218.
Pentadecane. (B. 260°)	$C_{15}H_{32}$	.825, 19°	Pelouze and Cahours.* J. 16, 524.
" (B. 258°)	"	.830	Cloez.† C. R. 85, 1003.
" (B. 258°–262°)	"	.8224, 0°	Bartoli and Straciati.* Bei. 9, 697.
" "	"	.6385, 258–262°	
Normal pentadecane.	"	.7757, 10°	Krafft. Ber. 15, 1687. Melts at 10°.
" " (B. 270°.5)	"	.7759, 10°	
" "	"	.7724, 15°	
" "	"	.7689, 20°	
" "	"	.7136, 99°.3	
Hexdecane, dioctyl, or di-isoctyl. (B. 278.)	$C_{16}H_{34}$	.850	Cloez.† C. R. 85, 1003.
" "	"	.7438, 15°	Eichler. Ber. 12, 1882.
" (B. 268°.5)	"	.8022, 0°	Alechin. Ber. 16, 1225.
" (B. 264°)	"	.80011, 18°	Lachowicz. A. C. P. 220, 187.
" (B. 278°—282°)	"	.8287, 0°	Bartoli and Straciati.* Bei. 9, 697.
" "	"	.6396, 278–282°	
Normal hexdecane.	"	.7754, 18°	Krafft. Ber. 15, 1687. Melts at 18°.
" " (B. 287°.5)	"	.7742, 20°	
" "	"	.7707, 25°	
" "	"	.7197, 99°	
" "	"	.7754, 14°.2	Krafft. Ber. 19, 2218.
Heptadecane. (B. 303°)	$C_{17}H_{36}$	.7764, 22°.5	Krafft.‡ Ber. 15, 1687. Melts at 22°.5.
"	"	.7767, 22°.5	
"	"	.7749, 25°	
"	"	.7714, 30°	
"	"	.7245, 99°	

* From petroleum. Probably a mixture of isomers.

† From hydrogen evolved from cast iron. Constitution undetermined.

‡ All of Krafft's paraffins are said to belong to the normal series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Octadecane. (B. 317°)	$C_{18}H_{38}$	.7768, 28°	Krafft. Ber. 15, 1687. Melts at 28°.
"	"	.7754, 30°	
"	"	.7719, 35°	
"	"	.7685, 40°	
"	"	.7288, 99°	
"	"	.7766, 28°	Krafft. Ber. 19, 2218.
Nondecane. (B. 330°)	$C_{19}H_{40}$	.7774, 32°	Krafft. Ber. 15, 1687. Melts at 32°.
"	"	.7754, 35°	
"	"	.7720, 40°	
"	"	.7323, 99°.3	
Eicosane. (M. 36°.7)	$C_{20}H_{42}$	.7779, 36°.7	Krafft. Ber. 15, 1711.
"	"	.7487, 80°.2	
"	"	.7363, 99°.2	
"	"	.7776, 36°.7	Krafft. Ber. 19, 2218.
Heneicosane. (M. 40°.4)	$C_{21}H_{44}$	.7783, 40°.4	Krafft. Ber. 15, 1711.
"	"	.7557, 74°.7	
"	"	.7400, 98°.9	
Docosane. (M. 44°.4)	$C_{22}H_{46}$	.7782, 44°.4	" "
"	"	.7549, 79°.6	
"	"	.7422, 99°.2	
Tricosane. (M. 47°.7)	$C_{23}H_{48}$	.7785, 47°.7	" "
"	"	.7570, 80°.8	
"	"	.7456, 98°.8	
Tetracosane. (M. 51°.1)	$C_{24}H_{50}$	.7786, 51°.1	" "
"	"	.7628, 76°	
"	"	.7481, 98°.9	
Heptacosane. (M. 59°.5)	$C_{27}H_{56}$	.7796, 59°.5	" "
"	"	.7659, 80°.8	
"	"	.7545, 99°	
Hentriacontane. (M. 68°.1)	$C_{31}H_{64}$	.7808, 68°.1	" "
"	"	.7730, 80°.8	
"	"	.7619, 98°.8	
Dotriacontane. (M. 70°)	$C_{32}H_{66}$	.7810, 70°	Krafft. Ber. 19, 2218.
Pentatriacontane.	$C_{35}H_{72}$	.7816, 74°.7	Krafft. Ber. 15, 1711.
" (M. 74°.7)	"	.7775, 80°.8	
"	"	.7664, 99°.2	
Paraffin.* M. 56°	C_nH_{2n+2}	.913	From ozokerite. Sauerlandt. J. 1879, 1147.
" M. 61°	"	.921	
" M. 67°	"	.927	
" M. 72°	"	.934	
" M. 76°	"	.940	
" M. 82°	"	.943	
" M. 38°	"	.872, 17°	Albrecht. D. J. 218, 280.
" "	"	.879, 55°	
" M. 43°	"	.883, 17°	
" "	"	.788, 55°	
" "	"	.889, 17°	
" "	"	.785, 55°	
" M. 46°	"	.887, 17°	
" "	"	.781, 60°–65°	
" M. 47°	"	.900, 17°	
" "	"	.775, 60°–65°	
" M. 51°	"	.908, 17°	
" "	"	.775, 60°–65°	
" M. 56°	"	.912, 17°	
" "	"	.777, 60°–65°	

***No attempt has been made to secure completeness concerning the specific gravity of common paraffin. The data given are included only to facilitate comparison.**

Name.		Formula.	Sp. Gravity.	Authority.
Paraffin.	M. 38°	$C_n H_{2n+2}$	.874, 21°, s.	From shale oil. Beilby. J. C. S., Sept., 1883, 388. Data given for sp. g. of paraffin in solution.
"		"	.783, 38°	
"		"	.779, 43°.4	
"		"	.775, 49°	
"		"	.771, 54°.5	
"		"	.767, 60°	
"		"	.763, 65°.5	

2d. Olefines. $C_n H_{2n}$.

Name.	Formula.	Sp. Gravity	Authority.
Ethylene. Liquefied	$C_2 H_4$	.414, —21°	Cailletet and Mathias. C. R. 102, 1202.
" "	"	.342, —7°.3	
" "	"	.353, —3°.7	
" "	"	.332, +4°.3	
" "	"	.306, +6°.2	
Butylene	$C_4 H_8$	.739, 0°	Chapman. J. 20, 581.
"	"	.635, —13°.5	Puchot. Ann. (5), 28, 207
"	"	.639, —14°.2	
Amylene	$C_5 H_{10}$	.6517, 16°.5	Mendelejeff. J. 13, 7.
"	"	.6633, 0°	Bauer. J. 14, 660.
"	"	.66277, 0°	Buff. A. C. P., 4 Supp. Bd., 129.
"	"	.65490, 10°	
"	"	.64450, 17°	
"	"	.62384, 33°	
"	"	.625812, 33°.5	
"	"	.62634, 35°.5	
"	"	.679, 0°	Buff. J. 21, 334.
"	"	.6319, 35°	Ramsay. J. C. S. 35, 463.
"	"	.6617, 9°.9	Schiff. G. C. I. 13, 187.
"	"	.6340, 35°.6	
"	"	.6356, 36°.3	
"	"	.6503, 21°	Gladstone. Bei. 9, 249.
Trimethyl ethylene	"	.6783, 0°	Le Bel. B. S. C. 25, 547.
β. Ethyl methyl ethylene	"	.670, 0°	Le Bel. B. S. C. 25, 546.
Isopropyl ethylene	"	.648, 0°	Flawitzky. Ber. 11, 992.
Hexylene	$C_6 H_{12}$	.709, 12°	Pelouze and Cahours. J. 16, 526.
"	"	.6937 } 0°	Wurtz. J. 17, 512.
"	"	.6986 } 0°	
"	"	.702, 0°	Geibel and Buff. J. 21, 336.
"	"	.6996 } 0°	Hecht. A. C. P. 165, 146.
"	"	.6997 } 0°	
Tetramethyl ethylene	"	.712	Pawlow. A. C. P. 196, 122.

Name.	Formula.	Sp. Gravity.	Authority.
α. Ethyl dimethyl ethylene. " "	C_6H_{12}	.712, 0°	Jawein. Ber. 11, 1258.
	"	.698, 19°	
β. Ethyl dimethyl ethylene. " "	"	.702, 0°	" "
	"	.687, 19°	
Heptylene	C_7H_{14}	.718, 18°	Williams. J. 11, 438.
"	"	.7060, 12°.5	Schorlemmer. A. C. P. 136, 257.
"	"	.7026, 19°.5	" "
"	"	.7060, 16°	Grimshaw. A. C. P. 166, 163.
"	"	.742, 20°	Renard. Ber. 15, 2368.
"	"	.71812, 20°	Sokolow. Ber. 21, ref. 56.
Dimethyl isopropyl ethylene.	"	.6985, 14°	Markownikow. Z. C. 14, 268.
" " "	"	.7144, 0°	Pawlow. A. C. P. 178, 194.
Octylene	C_8H_{16}	.708, 16°	Cahours. C. R. 31, 143.
"	"	.723, 17°	Bouis. J. 7, 582.
"	"	.737, 20°	Fittig. J. 13, 320.
"	"	.7396, 0°	Warren and Storer. J. 21, 331.
"	"	.7217, 17°	Möslinger. Ber. 9, 1000.
"	"	.7294, 9°.9	Schiff. G. C. I. 13, 177.
"	"	.6306, 123°.4	
"	"	.7222, 22°	Lachowicz. A. C. P. 220, 185.
"	"	.7197, 20°	Brühl. A. C. P. 235, 1.
"	"	.73645, 20°	Sokolow. Ber. 21, ref. 56.
Diisopropyl ethylene	"	.7526, 16°	Williams. Ber. 10, 908.
Methyl ethyl propyl ethylene.	"	.73138, 20°	Sokolow. Ber. 21, ref. 56.
Diisobutylene	"	.784, 0°	Butlerow. J. C. S. 34, 122.
"	"	.737, 0°	Lermontoff. A. C. P. 196, 116.
Nonylene. B. 145°	C_9H_{18}	.757, 20°.5	Fittig. J. 13, 321.
" B. 153°	"	.7618, 0°	Warren and Storer. J. 21, 331.
" B. 134°	"	.853, 18°.4	Lemoine. B. S. C. 41, 161.
"	"	.74333, 20°	Sokolow. Ber. 21, ref. 56.
Diamylene. B. 165°	$C_{10}H_{20}$	.7777, 0°	Bauer. J. 14, 660.
" B. 151°	"	.8416, 0°	Schneider. A. C. P. 157, 208.
"	"	.8248, 20°	
" B. 174°.6	"	.7912, 0°	Warren and Storer. J. 21, 332.
" B. 175°.8	"	.823, 0°	Warren and Storer. J. 21, 331.
"	"	.7789, 10°	Schiff. G. C. I. 13, 177.

Name.	Formula.	Sp. Gravity.	Authority.
Diamylene. B. 156°	$C_{10}H_{20}$	.6611 } 156°	Schiff. G. C. I. 13, 177.
"	"	.6615 } 156°	
"	"	.77753, 15°.2	Nasini and Bernheimer. G. C. I. 15, 50.
" B. 165°	"	.855, 14°	Lemoine. B. S. C. 41, 161.
" B. 164°	"	.7387, 20°	Lachowicz. A. C. P. 220, 177.
Endecylene	$C_{11}H_{22}$	.782, 0°	Warren. J. 21, 330.
"	"	.8398, 0°	Warren and Storer. J. 21, 332.
"	"	.791, 0°	
Dodecylene. B. 216°	$C_{12}H_{24}$	.791, 0°	Warren. J. 21, 330.
" B. 212°.6	"	.8361	Warren and Storer. J. 21, 332.
" B. 208°-219°.	"	.8543 } 0°	
"	"	.8654 } 0°	
"	"	.7954, —31°	Krafft. Ber. 16, 3018.
"	"	.7729 } 0°	
"	"	.7732 } 0°	
"	"	.7620, 15°	
"	"	.7511, 30°	
Dihexylene. B. 196°-199°.	"	.796, 0°	From two sources. Jawein. Ber. 11, 1258.
"	"	.786, 19°	
"	"	.809, 0°	
"	"	.798, 19°	
Triisobutylene. B. 178°	"	.774, 0°	Butlerow. Mem. Acad. St. Petersb., 1879.
"	"	.746, 50°	
"	"	.773 } 0°	Lermontoff. A. C. P. 196, 116.
"	"	.774 } 0°	
" B. 180°	"	.782, 0°	Five different lots. Puchot. Ann. (5), 28, 525.
"	"	.7435, 51°.6	
"	"	.707, 99°.5	
"	"	.785, 0°	
"	"	.751, 44°.9	
"	"	.783, 0°	
"	"	.738, 60°.5	
"	"	.707, 100°.2	
"	"	.780, 0°	
"	"	.779, 0°	
"	"	.768, 14°	
Tridecylene	$C_{13}H_{26}$	.8445, 0°	Warren and Storer. J. 21, 332.
Tetradecylene	$C_{14}H_{28}$	.7936, —12°	Krafft Ber. 16, 3018.
"	"	.7852, 0°	
"	"	.7745, 15°	
"	"	.7638, 30°	
Triamylene	$C_{15}H_{30}$	.8139	Bauer. J. 14, 660.
Cetene. B. 275°	$C_{16}H_{32}$	.7893, 15°.2	Mendelejeff. J. 13, 7.
"	"	.7915, 4°	Two samples. Krafft. Ber. 16, 3018.
"	"	.7839, 15°	
"	"	.7686, 37°.1	
"	"	.7917, 4°	
"	"	.7842, 15°	
"	"	.7689, 37°.1	
Dioctylene. B. 250°	"	.814, 15°	Bouis. Watts' Dict.
Etherol. B. 280°	"	.9174	Dumas and Boullay. See Serullas.

Name.	Formula.	Sp. Gravity.	Authority.
Etherol	$C_{16}H_{32}$	.921	Serullas. Ann. (2), 39, 178.
Octodecylene	$C_{18}H_{36}$	.7910, 18°	Krafft. Ber. 16, 3018.
"	"	.7881, 22°.1	
"	"	.7790, 35°.6	
Tetramylene	$C_{20}H_{40}$	.8710, 0°	Bauer. J. 14, 660.
Cerotene	$C_{27}H_{54}$	.861, 15°	Weltzien's "Zusammenstellung."
Melene	$C_{30}H_{60}$	.89	Watts' Dictionary.

3d. Acetylene Series and Derivatives.

Name.	Formula.	Sp. Gravity.	Authority.
Acetylene. Liquefied	C_2H_2	.460, —7°	Ansdell. C. N. 40, 136. Critical t°., 37°.05.
" "	"	.456, —3°	
" "	"	.451, 0°	
" "	"	.441, 4°.4	
" "	"	.432, 9°	
" "	"	.420, 16°.4	
" "	"	.413, 20°.6	
" "	"	.404, 26°.25	
" "	"	.397, 30°	
" "	"	.381, 34°	
" "	"	.364, 35°.8	
Valerylene. B. 41°—42°	C_5H_8	.69999, 0°	Buff. A. C. P., 4 Supp. Bd., 129.
"	"	.687386, 17°	
"	"	.65719, 41°	
"	"	.65082, 42°	
Isopropyl acetylene	"	.652, 11°	Bruylants. Ber. 8, 407.
" " B. 28°-29°	"	.6854, 0°	Flawitzky and Kriloff. Ber. 11, 1939.
Isoprene. B. 37°—38°	"	.6823, 20°	Williams. J. 13, 495.
"	"	.6709, 18°	Gladstone. J. C. S. 49, 623.
" Pentine	"	.6766, 18°	" "
Hexoylene. B. 80°—83°	C_6H_{10}	.710, 13°	Reboul and Truchot. J. 20, 587.
"	"	.7494, 0°	Hecht. Ber. 11, 1051.
"	"	.7377, 13°	
Diallyl. B. 59°.5	"	.684, 14°	Berthelot and Luca. J. 1, 590.
"	"	.68724, 17°	Buff. A. C. P., 4th Supp. Bd., 129.
"	"	.64682, 59°.5	
"	"	.64564, 58°	
"	"	.7074, 0°	Zander. A. C. P. 214, 181.
"	"	.6508, 59°.5	
"	"	.6983, 11°.9	Schiff. G. C. I. 13, 177.
"	"	.6503, 59°.3	
"	"	.6880, 20°	Brühl. Bei. 4, 780.
Diallylene	C_6H_8	.8579, 18°.2	L. Henry. C. N. 38, 101.

Name.	Formula.	Sp. Gravity.	Authority.
Dipropargyl	$C_6 H_6$	.81, 18°	L. Henry. J. C. S. (2), 11, 1215.
"	"	.82	Berthelot and Ogier. J. C. S. 40, 719.
Ethyl propyl acetylene	$C_7 H_{12}$	.790, 0°	Béhal. Ber. 20, ref. 809.
Tetramethyl allylene	"	.9513, 9°	L. Henry. Ber. 8, 400.
Methyl propyl allylene	"	.8031, 20°	Renard. C. R. 91, 419.
Heptidene	"	.7458, 20°	Brühl. A. C. P. 235, 1.
Conylene	$C_8 H_{14}$	.76076, 15°	Wertheim. A. C. P. 123, 157.
From allyl diethyl carbinol.	"	.7734, 0°	
" " "	"	.75856, 15°.4	Reformatsky. J. P. C. (2), 30, 217.
" " "	"	.75622, 18°	
From allyl dipropyl carbinol.	$C_{10} H_{18}$	.7870	
" "	"	.7830 0°	
" "	"	.7825 .7855	
" "	"	.7726	
" "	"	.7705 15° .7738	Reformatsky. J. P. C. (2), 27, 389.
" "	"	.7740, 16°	
" "	"	.7705	
" "	"	.7681 20°	
" "	"	.7665 .7703	
" "	"	.7728, 20°.6	
From allyl dimethyl carbinol.	$C_{12} H_{20}$	.8530, 0°	Nikolsky and Saytzeff. J. P. C. (2), 27, 383.
" "	"	.8385, 20°	
" "	"	.8512, 0°	
" "	"	.8449, 9°.8	Albitsky. J. P. C. (2), 30, 213.
" "	"	.8349, 21°.4	
Dodecylidene	$C_{12} H_{22}$	.8030, 0°	
"	"	.7917, 15°	Krafft. Ber. 17, 1371.
"	"	.7788, 32°.5	
Tetradecylidene	$C_{14} H_{26}$	.8064, 6°.5	
"	"	.8000, 15°.2	" "
"	"	.7892, 30°	
Benylene	$C_{15} H_{28}$	.9114, 0°	Wertheim. A. C. P. 123, 157.
Trivalerylene	$C_{15} H_{24}$	.862, 15°	Reboul. J. 20, 585.
Hexadecylidene	$C_{16} H_{30}$	.8039, 20°	Krafft. Ber. 17, 1371.
"	"	.7969, 30°	
Octadecylidene	$C_{18} H_{34}$	.8016, 30°	" "
Eikosylene	$C_{20} H_{38}$	.8181, 24°	Lippmann and Hawliczek. Ber. 12, 72.

4th. Benzene Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzene	C_6H_6	.85, 15°.5	Faraday. P. T. 1825, 440.
"	"	.956, —18°, s.	
"	"	.85	Mitscherlich. A. C. P. 9, 43.
"	"	.85	Mansfield. J. 1, 711.
"	"	.89911, 0°	Kopp. P. A. 72, 243.
"	"	.88372, 15°.2	
"	"	.88354, 15°.3	
"	"	.8931, 5°—10°	Regnault. P. A. 62, 50.
"	"	.8827, 10°—15°	
"	"	.8838, 15°—20°	
"	"	.8841, 15°	Mendelejeff. J. 13, 7.
"	"	.8667	Church. J. 17, 531.
"	"	.8957, 0°	Warren. J. 18, 515.
"	"	.8820, 15°.5	
"	"	.895, 3°	Jungfleisch. C. R. 64, 911.
"	"	.812, 80°.5	
"	"	.8995, 0°	Louguinine. Ann. (4), 11, 453. Other values given for intermediate t°s.
"	"	.8890, 10°	
"	"	.8784, 20°	
"	"	.8568, 40°	
"	"	.8349, 60°	
"	"	.8126, 80°	
"	"	.90023, 0°	Adrieenz. Ber. 6, 442.
"	"	.89502, 5°	
"	"	.88982, 10°	
"	"	.88462, 15°	
"	"	.87940, 20°	
"	"	.87417, 25°	
"	"	.86891, 30°	
"	"	.86362, 35°	
"	"	.85829, 40°	
"	"	.85291, 45°	
"	"	.84748, 50°	
"	"	.84198, 55°	
"	"	.83642, 60°	
"	"	.83078, 65°	
"	"	.82505, 70°	
"	"	.81923, 75°	
"	"	.81331, 80°	
"	"	.899487, 0°	Pisati and Paterno. J. C. S. (2), 12, 686.
"	"	.883573, 15°	
"	"	.872627, 25°	
"	"	.846170, 50°	
"	"	.818721, 75°	
"	"	.88029	Landolt. Ber. 9, 907.
"	"	.8773, 20°	Naumann. Ber. 10, 1422.
"	"	.8142, 80°	Ramsay. J. C. S. 35, 463.
"	"	.8858, 15°	Thorpe and Watts. J. C. S. 37, 102.
"	"	.8111, 80°	Schiff. Ber. 14, 2769.

Name.	Formula.	Sp. Gravity.	Authority.
Benzene	C_6H_6	.9000, 0°	Dieff. J. P. C. (2), 27, 368.
"	"	.8818, 20°	
"	"	.8839, 14°.2	Schiff. G. C. I. 13, 177.
"	"	.8111, 80°.1	
"	"	.8799, 20°	Brühl. Bei. 4, 780.
"	"	.87901, 20°	Flink. Bei. 8, 262.
"	"	.8719, 25°.7	Schall. Ber. 17, 2555.
"	"	.8845, 13°.8	
"	"	.8881, 7°5	Gladstone. Bei. 9, 249.
"	"	.8901, 10°	
"	"	.8903, 10°	
"	"	.8801, 20°	Knops. V. H. V. 1887, 17.
"	"	.85716, 40°.1	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 654.
"	"	.85493, 41°.3	
"	"	.84324, 53°.2	
"	"	.84006, 54°.7	
"	"	.83101, 64°.1	
"	"	.83081, 64°.2	
"	"	.82099, 72°.9	
"	"	.82079, 73°.4	
"	"	.81387, 79°.2	
"	"	.81392, 79°.2	
"	"	.81297, 79°.9	
"	"	.87907, 20°	Weegmann. Z. P. C. 2, 218.
Toluene	C_7H_8	.86	Pelletier and Walter. Gm. H.
"	"	.821	Couerbe. Gm. H.
"	"	.864, 23°	Glénard and Boudault. Gm. H.
"	"	.87, 18°	Deville. Gm. H.
"	"	.8650	Church. J. 17, 531.
"	"	.8824, 0°	Warren. J. 18, 515.
"	"	.8720, 15°	
"	"	.881, 5°	Tollens and Fittig. A. C. P. 131, 303.
"	"	.8841, 0°	Louguinine. Ann. (4), 11, 453. Other values given for intermediate t°s.
"	"	.8657, 20°	
"	"	.8375, 50°	
"	"	.8086, 80°	
"	"	.7889, 100°	
"	"	.866, 20°	Post and Mehrtens. Ber. 8, 1551.
"	"	.8657, 20°	Naumann. Ber. 10, 1425.
"	"	.7650, 111°	Ramsay. J. C. S. 35, 463.
"	"	.8822, 0°	Naccari and Pagliani. Bei. 6, 88. Several other intermediate values are given.
"	"	.8797, 2°.77	
"	"	.8722, 10°.89	
"	"	.8692, 14°.13	
"	"	.8653, 18°.43	
"	"	.8556, 28°.74	
"	"	.8430, 42°.24	
"	"	.8258, 60°.04	
"	"	.8136, 72°.46	
"	"	.7874, 99°.01	
"	"	.7811, 105°.17	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Toluene	C_7H_8	.8708, 13°.1	Schiff. G. C. I 13, 177.
"	"	.7780, 109°.2	
"	"	.77807, 109°.2	
"	"	.7781, 109°.2	
"	"	.8656, 20°	Brühl. Bei. 4, 780.
"	"	.7801, 109°	Schall. Ber. 17, 2204.
"	"	.8617, 26°	Schall. Ber. 17 2555.
"	"	.85098, 34°.5	
"	"	.8704, 7°.5	Gladstone. Bei. 9, 249.
"	"	.8643, 14°	Gladstone and Tribe. J. C. S. 47, 448.
"	"	.8691, 14°	
"	"	.82664, 61°.2	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 656.
"	"	.82441, 62°.3	
"	"	.82435, 63°.5	
"	"	.80656, 81°.2	
"	"	.80637, 81°.5	
"	"	.79470, 93°.4	
"	"	.79494, 93°.4	
"	"	.78576, 102°.6	
"	"	.78515, 103°	
"	"	.77816, 110°.1	
"	"	.77788, 110°.1	
"	"	.77741, 110°.7	
"	"	.77694, 110°.8	
Xylene*	$C_6H_4(CH_3)_2$	.8309, 15°	Mendelejeff. J. 13, 7.
"	"	.8668, 21°	Beilstein. A. C. P. 133, 37.
"	"	.8770, 0°	Louguinine. Ann. (4), 11, 453. Values given for other intermediate t°s.
"	"	.8600, 20°	
"	"	.8340, 50°	
"	"	.8073, 80°	
"	"	.7892, 100°	
"	"	.8616, 20°	Naumann. Ber. 10, 1426.
"	"	.7335, 132-134°	Ramsay. J. C. S. 35, 463.
"	"	.8619, 20°	Brühl. A. C. P. 235, 1.
Orthoxylene	" 1.2	.7559, 141°.1	Schiff. Ber. 15, 2974.
"	"	.8632, 18°	Gladstone. Bei. 9, 249.
"	"	.876, 24°.5	Colson. Ann. (6), 6, 86.
"	"	.81449, 90°.4	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 656.
"	"	.81422, 90°.6	
"	"	.79497, 112°.7	
"	"	.79435, 112°.9	
"	"	.78204, 123°.8	
"	"	.78188, 123°.8	
"	"	.77398, 133°.9	
"	"	.77413, 133°.9	
"	"	.76684, 141°.1	
"	"	.76661, 141°.1	
"	"	.76569, 142°.5	
"	"	.8932, 0°	Pinette. A. C. P. 243, 50.
"	"	.7684, 141°.9	

***Exact character not specified. For sp. gr. of several mixed xylenes see Lewinstein, Ber. 17, 446.**

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Metaxylene	$C_6H_4(CH_3)_2$. 1.3	.878, 0°	Warren. J. 18, 515.
"	"	.866, 15°	
"	"	.8715, 12°.3	Schiff. G. C. I. 13, 177.
"	"	.7567, 139°	
"	"	.7571 139°.2	
"	"	.7572	
"	"	.8726, 15°.5	Gladstone. Bei. 9, 249.
"	"	.861, 24°.5	Colson. Ann. (6), 6, 86.
"	"	.8655, 20°	Brühl. A. C. P. 235, 1.
"	"	.80588, 88°.8	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 656.
"	"	.80522, 89°.3	
"	"	.78722, 108°.3	
"	"	.78667, 108°.7	
"	"	.77483, 120°.5	
"	"	.77427, 121°.8	
"	"	.76639 129°.2	
"	"	.76647	
"	"	.75799 138°.1	
"	"	.75795	
"	"	.75658 139°.1	
"	"	.75685	
"	"	.8812, 0°	Pinette. A. C. P. 243, 50.
"	"	.7567, 138°.9	
Paraxylene	" 1.4	.8621, 19°.5	Glinzer and Fittig. A. C. P. 136, 303.
"	"	.7543 136°.5	Schiff. Ber. 14, 2769.
"	"	.7545	
"	"	.8488, 16°	Gladstone. Bei. 9, 249.
"	"	.854, 24°.5	Colson. Ann. (6), 6, 86.
"	"	.80215 86°.9	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 656.
"	"	.80189	
"	"	.78341, 106°.9	
"	"	.78310, 107°.1	
"	"	.77292, 119°.2	
"	"	.75968 129°.6	
"	"	.75983	
"	"	.75429 137°.1	
"	"	.75421	
"	"	.75306 138°.4	
"	"	.75303	
"	"	.8801, 0°	Pinette. A. C. P. 243, 50.
"	"	.7558, 138°	
Ethylbenzene	$C_6H_5.C_2H_5$	.8664, 22°.5	Fittig and König. A. C. P. 144, 277.
"	"	.8760, 9°.9	Schiff. G. C. I. 13, 177.
"	"	.7611 135°.8	
"	"	.7612	
"	"	.88316, 0°	Weger. A. C. P. 221, 61.
"	"	.7612, 136°.5	
"	"	.8673, 20°	Brühl. A. C. P. 235, 1.
Trimethylbenzene. Mesitylene.	$C_6H_3(CH_3)_3$. 1.3.5	.863, 13°	Schwanert.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trimethylbenzene. Mesitylene.	$C_6 H_3 (C H_3)_3$	.8643, 0°	Warren. J. 18, 515.
" "	"	.8530, 15°	
"	"	.8694, 9°.8	Schiff. G. C. I. 13, 177.
"	"	.7372, 164°.5	
"	"	.8558, 20°	Brühl. Bei. 4, 781.
"	"	.8632, 19°	Gladstone. Bei. 9, 249.
" Pseudocumene	" 1.3.4.	.8901, 0°	Konowalow. Ber. 20, ref. 570.
Orthomethylethylbenzene	$C_6H_4.CH_3.C_2H_5$. 1.2.	.8731, 16°	Claus and Mann. Ber. 18, 1122.
Metamethylethylbenzene	" 1.3.	.869, 20°	Wroblevsky. A. C. P. 192, 198.
Paramethylethylbenzene	" 1.4.	.8694, 11°.3	Schiff. G. C. I. 13, 177.
"	"	.7393, 162°	
"	"	.7394, 162°	
"	"	.864, 20°	Anschütz. A. C. P. 235, 314.
Propylbenzene	$C_6 H_5. C_3 H_7$	.881, 0°	Paterno and Spica. Ber. 10, 294.
"	"	.88009, 0°	Spica. J.C.S. 36, 631.
"	"	.8692, 17°	Wispek and Zuber. A. C. P. 218, 380.
"	"	.8702, 9°.8	Schiff. G. C. I. 13, 177.
"	"	.7399, 158°.5	
Isopropylbenzene. Cumene.	"	.87	Pelletier and Walter. Ann. (2), 67, 269.
" "	"	.8792, 0°	Warren. J. 18, 515.
" "	"	.8675, 15°	
" "	"	.87976, 0°	Pisati and Paterno. J. C. S. (2), 12, 686.
" "	"	.85870, 25°	
" "	"	.83756, 50°	
" "	"	.81585, 75°	
" "	"	.79324, 100°	
" "	"	.86576, 17°.5	Liebmann. Ber. 18, 46.
" "	"	.8776, 0°	Two preparations. Silva. B. S. C. 43, 317.
" "	"	.8577, 25°	
" "	"	.87798, 0°	
" "	"	.85766, 25°	
" "	"	.8432, 12°	Gladstone. Bei. 9, 249.
Tetramethylbenzene	$C_6 H_2 (C H_3)_4$	.8816, 9°	Knublauch. Tübingen Inaug. Diss., 1872.
Dimethylethylbenzene	$C_6 H_3 (C H_3)_2 C_2 H_5$. 1.2.4.	.8783, 20°	Ernst and Fittig. A. C. P. 139, 192.
"	" 1.3.5.	.8644, 20°	Jacobsen. B. S. C. 24, 73.
"	" "	.861, 20°	Wroblevsky. A. C. P. 192, 217.
"	" 1.3.4.	.8686, 20°	Anschütz. A. C. P. 235, 324.
Diethylbenzene	$C_6 H_4 (C_2 H_5)_2$. 1.4.	.8707, 15°.5	Fittig and König. A. C. P. 144, 285.
Metamethylpropylbenzene.	$C_6H_4.CH_3.C_3H_7$. 1.3.	.863, 16°	Claus and Stuesser. Ber. 13, 899.

Name.	Formula.	Sp. Gravity.	Authority.
Metamethylpropylbenzene.	$C_6H_4.CH_3.C_3H_7$. 1.3	.8728, 0°	Spica. Ber. 16, 792.
"	" "	.864. 9°.8	Schiff. G. C. I. 13, 177.
"	" "	.7248, 175°.4	
Paramethylpropylbenzene. Cymene.	" 1.4	.860, 14°	Gerhardt and Cahours. A. C. P. 38, 345.
"	" "	.857, 16°	Nord. A. C. P. 63, 281.
"	" "	.8778, 0°	Kopp. A. C. P. 94, 257.
"	" "	.8678, 12°.6	
"	" "	.8660, 15°	Mendelejeff. J. 13, 7.
"	" "	.8664, 20°	Williams. J. C. S. 15, 120.
"	" "	.8697, 0°	From cummin oil. Warren. Mem. Amer. Acad. 9, 154.
"	" "	.8724, 0°	
"	" "	.8592, 14°	
"	" "	.8705, 0°	From cummin oil. Louguinine. Ann. (4), 11, 453. Other values given for intermediate t°s.
"	" "	.8544, 20°	
"	" "	.8302, 50°	
"	" "	.7893, 100°	
"	" "	.8732, 0°	From camphor. Louguinine. Ann. (4), 11, 453. Other values given for intermediate t°s.
"	" "	.8574, 20°	
"	" "	.8333, 50°	
"	" "	.7919, 100°	
"	" "	.8708, 0°	From two sources. Beilstein and Kupffer. J. C. S. (2), 12, 152.
"	" "	.8572, 20°.2	
"	" "	.8732, 0°	
"	" "	.8707, 0°	Beilstein and Kupffer. A. C. P. 170, 295.
"	" "	.86	Gladstone. J. C. S. (2), 11, 699.
"	" "	.8424	Ext. of 8, from different sources. Gladstone. J. C. S. (2), 11, 970.
"	" "	.8438	
"	" "	.858, 16°	Orlowsky. B. S. C. 21, 321.
"	" "	.87446, 0°	From cummin oil. Pisati and Paterno. J. C. S. (2), 12, 686.
"	" "	.85457, 25°	
"	" "	.82352, 50°	
"	" "	.81409, 75°	
"	" "	.79307, 100°	
"	" "	.87227, 0°	From cymyl alcohol. Pisati and Paterno. J. C. S. (2), 12, 686.
"	" "	.85258, 25°	
"	" "	.82352, 50°	
"	" "	.81209, 75°	
"	" "	.79129, 100°	
"	" "	.87224, 0°	From camphor. Pisati and Paterno. J. C. S. (2), 12, 686.
"	" "	.85237, 25°	
"	" "	.83251, 50°	
"	" "	.81230, 75°	
"	" "	.79122, 100°	

Name.	Formula.	Sp. Gravity.	Authority.
Paramethylpropylbenzene. Cymene.	$C_6H_4.CH_3.C_3H_7$. 1.4	.86542, 0°	From thyme oil. Pisati and Paterno. J. C. S. (2), 12, 686.
"	" "	.78429, 100°	
"	" "	.8598, 15°	From two sources. Kraut. A. C. P. 192, 224.
"	" "	.8732, 0°	
"	" "	.8595, 15°	
"	" "	.8718, 0°	Jacobsen. Ber. 11, 1060.
"	" "	.86035, 10°	
"	" "	.873, 0°	Febve. Ber. 14, 1720.
"	" "	.8720, 20°	Kanonnikoff. Bei. 7, 542.
"	" "	.7248, 176°.2	Schiff. Ber. 15, 2974.
"	" "	.8569	Brühl. A.C.P. 235, 1.
"	" "	.8551, 21°	Gladstone. J. C. S. 49, 623.
Methylisopropylbenzene	"	.86948, 0°	Silva. B. S. C. 43, 317.
"	"	.86211, 25°	
"	"	.8702, 0°	Jacobsen. Ber. 12, 431.
Butylbenzene	$C_6H_5.C_4H_9$	.8622, 16°	Radziszewski. Ber. 9, 260.
"	"	.875, 0°	Balbiano. Ber. 10, 296.
"	"	.864, 15°	
"	"	.794, 99°.3	
Isobutylbenzene	"	.8577, 16°	Riess. Z. C. 14, 3.
" α	"	.89, 15°	Radziszewski. Ber. 9, 260.
" β	"	.8726, 16°	
Methyldiethylbenzene	$C_6H_3.CH_3(C_2H_5)_2$. 1.3.5.	.8790, 20°	Jacobsen. B. S. C. 24, 74.
Dimethylpropylbenzene. Laurene.	$C_6H_3(CH_3)_2C_3H_7$	.887, 10°	Fittig, Köbrich, and Jilke. J. 20, 701.
Metaethylpropylbenzene	$C_6H_4.C_2H_5.C_3H_7$. 1.3	.8588, 19°	Renard. Ann. (6), 1, 223.
Amylbenzene	$C_6H_5.CH(C_2H_5)_2$	.8751, 0°	Lippmann and Louguinine. J. 20, 667.
"	"	.8731, 21°	Dafert. M. C. 4, 617.
"	$C_6H_5.C(CH_3)_2.C_2H_5$	.8728, 0°	Essner. Ber. 14, 2582.
"	$C_6H_5(CH_2)_4(CH)_3$	.8602, 22°	Schramm. A. C. P. 218, 389.
Isoamylbenzene	$C_6H_5.CH_2.CH_2.CH(CH_3)_2$	.859, 12°	Tollens and Fittig. A. C. P. 131, 303.
Orthoisoamylmethylbenzene.	$C_6H_4.CH_3.C_5H_{11}$. 1.2	.8945	Pabst. B. S. C. 25, 337.
Paraisoamylmethylbenzene.	" 1.4	.8643, 9°	Bigot and Fittig. J. 20, 667.
Parapropylisopropylbenzene.	$C_6H_4(C_3H_7)_2$. 1.4	.8713, 0°	Paterno and Spica. Ber. 10, 1746.
Isohexylbenzene	$C_6H_5.C_6H_{13}$	.8568, 16°	Schramm. A. C. P. 218, 391.
Amyldimethylbenzene	$C_6H_3(CH_3)_2.C_5H_{11}$	.8951, 9°	Bigot and Fittig. J. 20, 667.
Normal octylbenzene	$C_6H_5.C_8H_{17}$	.849, 15°	Schweinitz. Ber. 19, 642.
" "	"	.852, 14°	Ahrens. Ber. 19, 2718.
Diisoamylbenzene	$C_6H_4(C_5H_{11})_2$	.8868, 0°	A. Austin. B. S. C. 32, 13.

5th. Miscellaneous Aromatic Hydrocarbons.

Name.	Formula.	Sp. Gravity.	Authority.
Allylbenzene	$C_6H_5 . C_3H_5$	.9180, 15°	Perkin. C. N. 36, 211.
Isopropylvinylbenzene	$C_6H_4 . C_3H_7 . C_2H_3$	.8902, 15°	" "
Isopropylallylbenzene	$C_6H_4 . C_3H_7 . C_3H_5$	.890, 15°	" "
Isopropylbutenylbenzene	$C_6H_4 . C_3H_7 . C_4H_7$	.8875, 15°	" "
Phenylacetylene	$C_2H . C_6H_5$	.94658, 0°	Weger. A. C. P. 221, 61.
"	"	.80832, 141°.6	Weger. A. C. P. 221, 61.
"	"	.9295, 20°	Brühl. A. C. P. 235, 1.
Ethylphenylacetylene	$C_2 . C_2H_5 . C_6H_5$	.923, 21°	Morgan. J. C. S. (3), 1, 163.
Cinnamene. (Styrolene)	$C_2H_3 . C_6H_5$	.928, 15°	E. Kopp. J. P. C. 37, 283.
	"	.924	Blyth and Hofmann. A. C. P. 53, 294.
" "	"	.876 } 16°	Scharling. A. C. P. 97, 186.
	"	.896 } 16°	Scharling. A. C. P. 97, 186.
" "	"	.912, 15°	Perkin. J. C. S. 32, 660.
" "	"	.911 } 0°	From different sources. Krakau. Ber. 11, 1260.
" "	"	.912 } 0°	From different sources. Krakau. Ber. 11, 1260.
" "	"	.915 } 0°	From different sources. Krakau. Ber. 11, 1260.
" "	"	.925 } 0°	From different sources. Krakau. Ber. 11, 1260.
" "	"	.926 } 0°	From different sources. Krakau. Ber. 11, 1260.
" "	"	.7926, 148°	Schiff. G. C. I. 13, 177.
" "	"	.9251, 0°	Weger. A. C. P. 221, 61.
" "	"	.7914, 146°.2	Weger. A. C. P. 221, 61.
" "	"	.90595, 17°	Nasini and Bernheimer. G. C. I. 15, 50.
" "	"	.9084	Gladstone. J. C. S. 45, 241.
" "	"	.9409, 11°	Gladstone. J. C. S. 45, 241.
" "	"	.9074, 20°	Brühl. A. C. P. 235, 1.
Metacinnamene	$(C_8H_8)_n$	1.054, 13°	Scharling. A. C. P. 97, 186.
Dicinnamene	$C_{16}H_{16}$	1.027, 0°	Erdmann. A. C. P. 216, 189.
"	"	1.016, 15°	Erdmann. A. C. P. 216, 189.
Phenylbutylene	$C_4H_7 . C_6H_5$	.9015, 15°.5	Aronheim. B. S. C. 19, 258.
"	"	.8864, 12°.1	Nasini. Ber. 9, 331.
Phenylpentylene	$C_5H_9 . C_6H_5$	.8458, 23°	Dafert. M. C. 4, 625.
Phenylisopentylene	"	.878, 16°	Schramm. A. C. P. 218, 394.
Tetraphenylethane	$C_2H_2(C_6H_5)_4$	1.179	Schröder. Ber. 14, 2516.
"	"	1.184	Schröder. Ber. 14, 2516.
Phenyltolylethane	$C_2H_4 . C_6H_5 . C_7H_7$	.98	Bandrowski. B. S. C. 28, 79.
Ditolylethane	$C_2H_4(C_7H_7)_2$	.974, 20°	Anschütz. A. C. P. 235, 315.
Dixylylethane	$C_2H_4(C_8H_9)_2$	.966, 20°	Anschütz. A. C. P. 235, 326.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diphenylpropane	$C_3 H_6 (C_6 H_5)_2$	.9956, 0°	Silva. Ber. 12, 2270.
"	"	.9205, 100°	
Tetrahydrotoluene	$C_7 H_{12}$	.797, 18°	Renard. Ann. (6), 1, 223.
Tetrahydroxylene	$C_8 H_{14}$	.814, 0°	Wreden. A. C. P. 163, 337.
"	"	.8158	Renard. Ann. (6), 1, 223.
Hexhydrobenzene	$C_6 H_{12}$	.76, 0°	Wreden. J. R. C. 5, 350.
Hexhydrotoluene	$C_7 H_{14}$	.772, 0°	Wreden. Ber. 10, 718.
"	"	.758, 20°	
"	"	.742, 20°	Renard. Ann. (6), 1, 223.
"	"	.7741, 0°	Lossen and Zander. A. C. P. 225, 109.
"	"	.7587, 19°	
"	"	.6896, 96°.5	
Hexhydroxylene. (B. 137°.6.)	$C_8 H_{16}$	.7956, 4°	Schiff. Ber. 18, 1407.
" (B. 121°.5)	"	.764, 19°	Renard. Ann. (6), 1, 223.
Hexhydroisoxylene.	"	.781, 0°	Wreden. Ber. 10, 712.
" (B. 118°)	"	.765, 20°	
"	"	.777, 0°	Wreden. J. C. S. (2), 12, 258.
"	"	.7814, 0°	Lossen and Zander. A. C. P. 225, 109.
"	"	.7665, 19°.8	
"	"	.6781, 118°	
Hexhydrocumene	$C_9 H_{18}$	.787, 20°	Renard. Ann. (6), 1, 223.
Hexhydropseudocumene	"	.7812, 0°	Konowaloff. Ber. 20, ref. 571.
"	"	.7667, 20°	
Hexhydrocymene	$C_{10} H_{20}$	.8116, 17°	Renard. Ann. (6), 1, 223.
β. Benzylene	$C_7 H_6$	1.106, 85°	Gladstone and Tribe. J. C. S. 47, 448.
Diphenyl	$C_{12} H_{10}$	1.160	Schröder. Ber. 14, 2516.
"	"	1.169	
"	"	.9961, 70°.5	Schiff. A. C. P. 223, 247.
Triphenylbenzene	$C_6 H_3 (C_6 H_5)_3$	1.205	Schröder. Ber. 14, 2516.
"	"	1.206	
Phenyltoluene	$C_6H_4 . CH_3 . C_6H_5$. 1.4	1.015, 27°	Carnelley. J. C. S. (2), 14, 18.
Benzylethylbenzene	$C_6H_4 . C_2H_5 . C_7H_7$. 1.4	.985, 18°.9	Walker. Ber. 5, 686.
Metabenzyltoluene	$C_6H_4 . CH_3 . C_7H_7$. 1.3	.997, 17°.5	Senff. A. C. P. 220, 223.
Parabenzyltoluene	" 1.4	.995, 17°.5	Zincke. A. C. P. 161, 93.
Dibenzyltoluene	$C_6 H_3 . C H_3 (C_7 H_7)_2$	1.049	Weber and Zincke. J. C. S. (2), 13, 155.
Phenylxylene	$C_6 H_3 (C H_3)_2 C_6 H_5$	1.01, 0°	Barbier. J. C. S. (2), 13, 62.
Benzylcymene	$C_{10} H_{13} . C_7 H_7$	.987, 0°	Mazzara. Ber. 12, 384.
Dipentenylbenzene	$C_{22} H_{26}$	.9601, 23°	Dafert. M. C. 4, 625.
Benzylidenetolylene ?	$C_{14} H_{12}$	1.0032, 18°	Lippmann. Ber. 19, ref. 744.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ditolyl	$C_{14}H_{14}$	.9172, 121°	Schiff. A. C. P. 223, 247.
Dibenzyl	"	1.002, 14°	Limpricht. J. 19, 593.
"	"	.9945, 10°.5	Fittig. A. C. P. 139, 178.
"	"	1.0423, 52°.3	Schiff. A. C. P. 223, 247.
Dixylylene	$C_{16}H_{16}$	.9984, 22°	Lippmann. Ber. 19, ref. 744.
Naphthalene. l.	$C_{10}H_8$	.9774, 79°.2	Kopp. A. C. P. 95, 307.
" "	"	.9628, 99°.2	Alluard. J. 12, 472.
" s.	"	1.15173, 19°	Vohl.
" "	"	1.153, 18°	Watts' Dictionary.
" "	"	1.048	Ure. Gm. H.
" "	"	1.321 } 4°	Schröder. Ber. 12, 1611.
" "	"	1.341 } 4°	
" l.	"	.8779, 218°	Ramsay. J. C. S. 39, 65.
" "	"	.9777, 79°.2	Schiff. A. C. P. 223, 247.
" "	"	.982, 79°	Lossen and Zander. A. C. P. 225, 109.
" "	"	.8674, 217°.1	
" "	"	.96208, 98°.4	Nasini and Bernheimer. G. C. I. 15, 50.
Methylnaphthalene	$C_{10}H_7 . CH_3$	1.0287, 11°.5	Fittig and Remsen. A. C. P. 155, 114.
"	"	1.0042, 22°	Reingruber. A. C. P. 206, 376.
Dimethylnaphthalene	$C_{10}H_6(CH_3)_2$	1.0176, 20°	Giovanozzi. J. C. S. 42, 853.
"	"	1.0283, 0°	Cannizzaro and Carnelutti. J. C. S. 44, 80.
"	"	1.10199, 12°	
"	"	1.01803, 16°.4	Nasini and Bernheimer. G. C. I. 15, 50.
"	"	1.01058, 27°.7	
"	"	.97411, 77°.7	
Ethylnaphthalene	$C_{10}H_7 . C_2H_5$	1.0184, 10°	Fittig and Remsen. A. C. P. 155, 118.
"	"	1.0204, 0°	Carnelutti. Ber. 13, 1672.
"	"	1.0123, 11°.9	
Isopropylnaphthalene	$C_{10}H_7 . C_3H_7$	.990, 0°	Roux. Ann. (6), 12, 319.
Amylnaphthalene	$C_{10}H_7 . C_5H_{11}$	.973, 0°	Roux. Ann. (6), 12, 321.
Naphthalene tetrahydride	$C_{10}H_8 . H_4$	.981, 12°	Graebe. B. S. C. 18, 205.
" "	"	.995, 0°	Wreden and Znatowicz. Ber. 9, 1607.
Naphthalene hexhydride	$C_{10}H_8 . H_6$	.952, 0°	" "
" "	"	.9419, 0°	Lossen and Zander. A. C. P. 225, 109.
" "	"	.7809, 200°	
" "	"	.94887, 16°.4	Nasini and Bernheimer. Two samples. G. C. I. 15, 50.
" "	"	.95807, 18°.4	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Naphthalene octohydride	$C_{10}H_8 . H_8$	.910, 0°	Wreden and Znatowicz. Ber. 9, 1607.
Naphthalene decahydride	$C_{10}H_8 . H_{10}$	.857, 0°	" "
Naphthalene dodecahydride.	$C_{10}H_8 . H_{12}$	.802, 0°	" "
Dimethylnaphthalene hexhydride.	$C_{12}H_{12} . H_6$	.92194, 19°.8	Nasini and Bernheimer. G. C. I. 15, 50.
α. Benzylnaphthalene	$C_{10}H_7 . C_7H_7$	1.166	Miquel. Ber. 9, 1034.
"	"	1.165, 0°	Vincent and Roux. B. S. C. 40, 163.
β. Benzylnaphthalene	"	1.176, 0°	" "
Acenaphtene	$C_{10}H_6 . C_2H_4$	1.0300, 103°	Schiff. A. C. P. 228, 247.
Anthracene	$C_{14}H_{10}$	1.147	Reichenbach. Watts' Dict.
Phenanthrene	"	1.0630, 100°.5	Schiff. A. C. P. 228, 247.
Phenanthrene tetrahydride.	$C_{14}H_{10} . H_4$	1.067, 10°.2	Graebe. J. C. S. (2), 14, 70.
Stilbene	$C_{14}H_{12}$	.9707, 119°.2	Schiff. A. C. P. 228, 247.
Retene. Solid	$C_{18}H_{18}$	1.104 } 16°	Ekstrand. A. C. P. 185, 78.
" "	"	1.110 } 16°	
" "	"	1.132 } 16°	
" "	"	1.152 } 16°	
" "	"	1.162 } 16°	
" Fused	"	1.063	
" "	"	1.067	
" "	"	1.074	
" "	"	1.077	
" "	"	1.087	
" "	"	1.093	

6th. Terpenes.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Oil of turpentine	$C_{10}H_{16}$	.8902, 0°	Frankenheim. J. 1, 68.
" "	"	.8555 } 20°	Four different samples. Gladstone. J. C. S. 17, 1.
" "	"	.8600 } 20°	
" "	"	.8614 } 20°	
" "	"	.8644 } 20°	
" " B. 168°.2	"	.7283, 168°.2	Schiff. Bei. 9, 559.
From Abies Reginæ-Amaliæ.	"	.868	Buchner and Theil. J. 17, 536.
From Pinus abies	"	.856, 20°	Wöhler. Gm. H.
" " "	"	.880, 15°	Blanchet and Sell. Gm. H.
From Pinus maritima	"	.864, 16°	Berthelot. J. 6, 519.
" " " B. 179°.3	"	.8639, 0°	Flawitzky. Ber. 12, 2357.
" " "	"	.8486, 20°	
From Pinus picea	"	.859, 6°	Flückiger. J. 8, 643.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
From Pinus pumilio	$C_{10}H_{16}$	.875, 17°	Buchner. J. 13, 479.
From Pinus sylvestris. B. 171°.	"	.86529, 15°	Tilden. J. C. S. 33, 80.
" " " B. 156°.	"	.8746, 0°	Flawitzky. Ber. 11, 1846.
" " " "	"	.8621, 16°	
" " " "	"	.8547, 24°.5	
" " "	"	.8764, 0°	Flawitzky. Ber. 20, 1956.
" " "	"	.8600, 20°	
Terpene ?	"	.7421 156°.1	Schiff. G. C. I. 13, 177.
"	"	.7422	
" ?	"	.8587, 20°	Kanonnikoff. Bei. 7, 592.
"	"	.8711, 10°.2	Gladstone. J. C. S. 49, 623.
Isoterpene	"	.8448, 20°	Kanonnikoff. Bei. 7, 592.
"	"	.8627, 0°	Flawitzky. Ber. 20, 1961.
"	"	.8480, 20°	
Thuja terpene. B. 160°	"	.852, 15°	Jahns. Ber. 16, 2930.
From Sequoia. B. 155°	"	.8522, 15°	Lunge and Steinkauler. Ber. 14, 2204.
Terebilene. B. 184°	"	.843	Watts' Dictionary.
Australene. B. 157°	"	.8681, 16°	Atterberg. Ber. 10, 1203.
Terebenthene. B. 157°	"	.871, 17°.5	Atterberg. Ber. 14, 2581.
"	"	.8767, 0°	Riban. B. S. C. 21, 173.
"	"	.8601, 20°	
"	"	.8436, 40°	
"	"	.8270, 60°	
"	"	.8105, 80°	
"	"	.7939, 100°	
"	"	.8812, 0°	Barbier. C. R. 96, 1066.
"	"	.8815, 0°	
"	"	.8724, 12°	
" From camphor oil.	"	.8641, 15°	Yoshida. J. C. S. 47, 779.
Terebene	"	.8718	Pierre. J. 4, 52.
"	"	.8645, 5°–10°	Regnault. P. A. 62, 50.
"	"	.8605, 10°–15°	
"	"	.8564, 15°–20°	
" B. 160°	"	.8583, 20°	Gladstone. J. C. S. 17, 1.
"	"	.8767, 0°	Riban. B. S. C. 21, 173.
"	"	.8600, 20°	
"	"	.8438, 40°	
"	"	.8267, 60°	
"	"	.8100, 80°	
"	"	.7938, 100°	
" B. 156°	"	.8264, 15°	Orlowsky. B. S. C. 21, 321.
Isoterebenthene. B. 175°	"	.8432, 22°	Berthelot. J. 6, 523.
"	"	.8586, 0°	Riban. C. R. 79, 314.
"	"	.8427, 20°.28	
"	"	.8278, 40°.19	
"	"	.8131, 58°.32	
"	"	.7964, 79°.24	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isoterebenthene	$C_{10}H_{16}$	.7793, 100°	Riban. C. R. 79, 314.
Terpilene. Laevorotatory	"	.8672, 0°	Bouchardat and Lafont. C. R. 102, 50.
Terpinylene. B. 177°	"	.8526, 15°	Tilden. C. N. 37, 166.
Terpinene. B. 178	"	.93, 0°	Walitzky. Ber. 15, 1086.
"	"	.855	Wallach. A. C. P. 230, 260.
Sylvestrene. B. 175°	"	.8612, 16°	Atterberg. Ber. 10, 1206.
"	"	.8598, 17°.5	Atterberg. Ber. 14, 2531.
"	"	.8658, 14°	Gladstone. Bei. 9, 249.
Austrapyrolene. B. 177°	"	.847	Watts' Dictionary.
From oil of neroli. B. 173°	"	.8466, 20°	Gladstone. J. C. S. 17, 1.
From oil of orange	"	.835	Soubeiran and Capitaine.
" " " B. 174°	"	.8460, 20°	Gladstone. J. C. S. 17, 1.
" " "	"	.8468, 20°	Gladstone. J. C. S. 17, 1.
From oil of petit grain	"	.8470, 20°	" "
From Citrus lumia	"	.853, 18°	Luca. J. 13, 479.
From Citrus bigaradia	"	.8520, 10°	Luca. C. R. 45, 904.
" " "	"	.8517, 12°	Luca. C. R. 45, 904.
From Citrus medica	"	.8514, 15°	Berthelot. J. 6, 521.
" " "	"	.8466, 20°	Gladstone. J. C. S. 17, 1.
Oil of citron	"	.8597, 5°—10°	Regnault. P. A. 62, 50.
" "	"	.8558, 10°—15°	Regnault. P. A. 62, 50.
" "	"	.8518, 15°—20°	Regnault. P. A. 62, 50.
Citron terpene	"	.8593, 9°.9	Schiff. Ber. 19, 560.
" "	"	.8595, 9°.9	Schiff. Ber. 19, 560.
" "	"	.7279, 168°	Schiff. Ber. 19, 560.
" "	"	.7285, 168°	Schiff. Ber. 19, 560.
" "	"	.7286, 168°	Schiff. Ber. 19, 560.
From oil of lemon	"	.84	Zeller. Watts' Dict.
" " "	"	.86	Zeller. Watts' Dict.
" " "	"	.8380, 0°	Frankenheim. Two samples. J. 1, 68.
" " "	"	.8661, 0°	Frankenheim. Two samples. J. 1, 68.
" " " B. 173°	"	.8468, 20°	Gladstone. J. C. S. 17, 1.
Citrene. B. 165°	"	.8569	Blanchet and Sell. Gm. H.
From oil of bergamot	"	.856	Ohme. A. C. P. 31, 316.
" " "	"	.8464, 20°	Gladstone. J. C. S. 17, 1.
" " "	"	.8466, 20°	Gladstone. J. C. S. 17, 1.
Hesperidene	"	.8483	Gladstone. Bei. 9, 249.
From oil of angelica	"	.8487	Müller. Ber. 14, 2483.
" " " B. 175°	"	.833, 0°	Naudin. Ber. 15, 254.
" " " B. 158°	"	.8609, 16°.5	Beilstein and Wiegand. Ber. 15, 1741.
" " " B. 173°	"	.8504, 16°.5	Beilstein and Wiegand. Ber. 15, 1741.
" " " B. 176°	"	.8481, 16°.5	Beilstein and Wiegand. Ber. 15, 1741.

Name.	Formula.	Sp. Gravity.	Authority.
β Terebangeline. B. 166	$C_{10}H_{16}$	.870, 0°	Naudin. C. R. 96, 1158.
From oil of anise	"	.8580, 20°	Gladstone. J. C. S. 17, 1.
From oil of bay	"	.908, 15°	Blas. J. 18, 569.
" " "	"	.8508, 20°	Gladstone. J. C. S. 17, 1.
From oil of birch tar	"	.870, 20°	Sobrero. Watts' Dict.
From oil of calamus	"	.8793, 0°	Kurbatow. A. C. P. 173, 1.
From oil of camphor	"	.8733, 20°	Yoshida. J. C. S. 47, 779.
From oil of caraway	"	.8466, 20°	Gladstone. J. C. S. 17, 1.
Carvene	"	.861, 15°	Völckel. J. 6, 512.
"	"	.8530 } 20°	Gladstone. J. C. S. 17, 1.
"	"	.8545 } 20°	
"	"	.8530, 9°.8	Schiff. G. C. I. 13, 177.
"	"	.7127 } 186°.5	
"	"	.7132 } 186°.5	
"	"	.7138 } 186°.5	
"	"	.8529, 20°	Kanonnikoff. Bei. 7, 592.
"	"	.849, 15°	Flückiger. Ber. 17, ref. 358.
From oil of cascarilla	"	.8467, 20°	Gladstone. J. C. S. 17, 1.
From oil of copal	"	.951, 10°	Schibler. J. 12, 516.
From oil of cummin	"	.8772, 0°	Warren. J. 18, 515.
" " "	"	.8657, 15°	
From oil of dill	"	.8467, 20°	Gladstone. J. C. S. 17, 1.
From oil of elder	"	.8468, 20°	" "
From elemi	"	.849, 11°	Deville. J. 2, 448.
" "	"	.852, 24°	Stenhouse. A. C. P. 35, 304.
From oil of erechthidis	"	.8380, 18°.5	Beilstein and Wiegand. Ber. 15, 2854.
From oil of Erigeron canadense.	"	.8464, 18°	" "
From Eucalyptus amygdalina.	"	.8642, 20°	Gladstone. J. C. S. 17, 1.
From oil galbanum	"	.8842, 9°	Mössmer. J. 14, 687.
From Illicium religiosum	"	.855	Eykmann. Ber. 14, 1721.
From kauri gum	"	.863, 18°	Rennie. Ber. 14, 1719.
From laurel turpentine	"	.8618, 20°	Gladstone. J. C. S. 20, 1.
From oil of marjoram	"	.8463, 18°.5	Beilstein and Wiegand. Ber. 15, 2854.
From oil of mint	"	.8600, 20°	Gladstone. J. C. S. 17, 1.
" "	"	.8646, 17°.3	Gladstone. J. C. S. 49, 623.

Name.	Formula.	Sp. Gravity.	Authority.
From oil of peppermint	$C_{10}H_{16}$	.8602, 20°	Gladstone. J. C. S. 17, 1.
From menthol. B. 168.°6	"	.8254, 0°	Atkinson and Yoshida. J. C. S. 41, 49.
" "	"	.8178, 10°	
" "	"	.8111, 20°	
" "	"	.8001, 40°	
" "	"	.7924, 60°	
From oil of myrtle	"	.8690, 20°	Gladstone. J. C. S. 17, 1.
From oil of nutmeg	"	.8518 } 20°	" "
" " " B.167°	"	.8527 } 20°	
" " " B.164°	"	.8454, 25°	Gladstone. Bei. 9, 249.
" " " B.178°	"	.8480, 27°	
From oil of parsley	"	.8732, 20°	Gladstone. J. C. S. 17, 1.
From oil of parsnip	"	.865, 12°	Gerichten. Ber. 9, 259.
From Ptychotis ajowan	"	.854, 12°	Stenhouse. J. 9, 624.
From oil of rosemary	"	.8805, 20°	Gladstone. J. C. S. 17, 1.
From oil of sage. B. 155°	"	.8635* } 15°	Three isomers. Sigiura and Muir. J. C. S. 33, 292.
" " " B. 167°	"	.8866 } 15°	
" " " B. 165°	"	.8653 } 15°	
" " " B. 170°	"	.8653 } 15°	Muir. J. C. S. 37, 682.
" " " "	"	.8667 } 15°	
" " "	"	.8632, 24°.5	Gladstone. J. C. S. 49, 623.
From Satureja hortensis	"	.855, 15°	Jahns. Ber. 15, 819.
From oil of thyme	"	.8635, 20°	Gladstone. J. C. S. 17, 1.
Thymene	"	.868, 20°	Lallemand. J. 9, 616.
"	"	.8635, 20°	Kanonnikoff. Bei. 7, 592.
From oil of wormwood	"	.8565, 20°	Gladstone. J. C. S. 17, 1.
Cajeputene. B. 165°	"	.850, 15°	Schmidl. J. 13, 481.
Isocajeputene. B. 177°	"	.857, 16°	Schmidl. J. 13, 482.
Camphene	"	.8481, 47°.7	Riban. B. S. C. 24, 9.
"	"	.8387, 58°.9	
"	"	.8211, 79°.7	
"	"	.8062, 97°.7	
"	"	.8345, 99°.84	Spitzer. Ber. 11, 1815.
Camphilene	"	.87	Watts' Dictionary.
Caoutchin	"	.855, 0°	Bouchardat. B. S. C. 24, 109.
"	"	.842, 20°	
"	"	.842, 20°	Williams. J. 13, 495.
Cicutene	"	.87038, 18°	Van Ankum. J. 21, 794.
Cinaëbene	"	.878	Hirzel. J. 7, 592.
Cynene. B. 174°.5	"	.825, 16°	Völckel. A. C. P. 89, 358.
"	"	.8500, 15°	Hell and Stürcke. Ber. 17, 1972.
"	"	.8238, 50°	
"	"	.7851, 100°	

* Misprinted 0.8435. Corrected in later paper.

Name.	Formula.	Sp. Gravity.	Authority.
Cynene. B. 182°	$C_{10}H_{16}$	.85384, 16°	Wallach and Brass. A. C. P. 225, 291.
From cyneol. B. 179°	"	.85652	" "
" "	"	.85959	
Fellandrene	"	.8558, 10°	Pesci. G. C. I. 16, 225.
Gaultherilene	"	.8510, 20°	Gladstone. J. C. S. 17, 1.
Geraniene	"	.842 } 20°	Jacobsen. Z. C. 14, 171.
"	"	.843	
Licarene	"	.835, 18°	Morin. J. C. S. 42, 737.
Macene	"	.8529, 17°.5	Schacht. J. 15, 461.
Olibene	"	.863, 12°	Kurbatow. Z. C. 14, 201.
Safrene	"	.8345, 0°	Grimaux and Ruotte. J. 22, 783.
Tolene	"	.858, 10°	E. Kopp. J. 1, 737.
Polymer of isoprene	"	.866, 0°	Bouchardat. Ber. 8, 904.
" "	"	.854, 21°	
Polymer of valerylene	"	.886, 15°	" "
From oil of calamus	$C_{15}H_{24}$	.9180 } 20°	Gladstone. J. C. S. 17, 1.
" " "	"	.9275	
" " "	"	.942, 0°	Kurbatow. A. C. P. 173, 1.
From oil of cascarilla	"	.9212, 20°	Gladstone. J. C. S. 17, 1.
From oil of cedar	"	.9231, 18°	Gladstone. Bei. 9, 249.
From oil of cloves	"	.918, 18°	Ettling. Watts' Dict.
" " "	"	.9016, 14°	Williams. J. 11, 442.
" " "	"	.9041, 20°	Gladstone. J. C. S. 17, 1.
" " "	"	.905, 15°	Church. J. C. S. (2), 13, 115.
From oil of copaiva	"	.91	Posselt. J. 2, 455.
" " "	"	.881	Soubeiran and Capitaine. Gm. H.
" " "	"	.885	
" " "	"	.8978, 24°	Levy. Ber. 18, 3206.
From oil of cubebs	"	.915	
" " "	"	.930	Schmidt.
" " "	"	.938	
" " "	"	.9062, 20°	Gladstone. J. C. S. 17, 1.
" " "	"	.9289, 0°	Oglialore. Ber. 8, 1357.
Cedrene	"	.984, 14°.5	Walter. Ann. (3), 1, 501.
"	"	.915, 15°	Muir. J. C. S. 37, 13.
"	"	.9231, 18°	Gladstone. J. C. S. (2), 10, 1.
From Drybalanops camphora.	"	.900 } 20°	Lallemand. J. 12, 508.
" "	"	.921	
From gurgun balsam	"	.9044, 15°	Werner. J. 15, 461.
From oil of hemp	"	.9292, 0°	Valente. J. C. S. 40, 284.
From Laurus nobilis	"	.925, 15°	Blas. J. 18, 569.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
From Ledum palustre	$C_{15}H_{24}$	.9349, 0°	Rizza. Ber. 20, ref. 562.
" " "	"	.9237, 19°	
From maracaibo balsam	"	.921, 10°	Strauss. J. 21, 795.
Metatemplene	"	1.087, 4°	Flückiger. J. 8, 646.
From Myrtus pimenta	"	.98, 8°	Oeser. J. 17, 534.
From oil of patchouli	"	.9211, 20°	Gladstone. J. C. S. 17, 1.
" " "	"	.9255, 20°	
" " "	"	.9278, 20°	
" " "	"	.946, 0°	Montgolfier. Ber. 10, 284.
" " "	"	.937, 13°.5	
From oil of rosewood	"	.9042, 20°	Gladstone. J. C. S. 17, 1.
From oil of sage	"	.9198, 0°	Sigiura and Muir. J. C. S. 33, 297.
" "	"	.9137, 12°	
" "	"	.9072, 24°	
" "	"	.8970, 41°	
From oil of sandal wood	"	.9190	Gladstone. J. C. S. (2), 10, 1.
Sesquiterpene	"	.921, 16°	Wallach. A. C. P. 238, 85.
From oil of vitivert	"	.9382	Gladstone. J. C. S. (2), 10, 1.
From copaiva oil	$C_{20}H_{32}$	.892, 17°	Brix. Ber. 14, 2267.
From minjak-lagam oil	"	.923, 15°	Haussner. Ber. 16, 1387.
From oil of poplar	"	.9002	Piccard. C. C. (3), 6, 4.
From tar-cumene	" ?	.8850, 22°	Jacobsen. A. C. P. 184, 203.
Diterebene	"	.94	Watts' Dictionary.
Metaterebenthene	"	.913, 20°	Berthelot. J. 6, 524.
Colophene	"	.9391, 20°	Gladstone. J. C. S. 17, 1.
"	"	.94, 9°	Deville. P. A. 51, 439.
Difellandrene	"	.9528, 10°	Pesci. G. C. I. 16, 225.
Heveéne	"	.921, 21°	Bouchardat. A. C. P. 37, 30.
Tetraterebenthene	$C_{40}H_{64}$?	.977, 0°	Riban. C. R. 79, 891.

7th. Unclassified Hydrocarbons.

Name.	Formula.	Sp. Gravity.	Authority.
Heptanaphtene*	C_7H_{14}	.7778, 0°	Milkowsky. Ber. 18,
"	"	.7624, 17°.5	ref. 186.
Octonaphtene	C_8H_{16}	.7649, 0°	Markownikoff. Ber.
"	"	.7503, 18°	18, ref. 186.
Isooctonaphtene	"	.7765, 0°	
"	"	.7768, 0°	Putochin. Ber. 18,
"	"	.7637, 17°.5	ref. 186.
Nononaphtene	C_9H_{18}	.7808, 0°	Markownikoff and Ogloblin. Ber. 16, 1877.
"	"	.7808, 0°	Konowaloff. Ber.
"	"	.7652, 20°	18, ref. 186.
Dekanaphtene	$C_{10}H_{20}$	.795, 0°	Markownikoff and Ogloblin. Ber. 16, 1877.
Endekanaphtene	$C_{11}H_{22}$	.8119, 0°	" "
Dodekanaphtene	$C_{12}H_{24}$	.8055, 14°	" "
Tetradekanaphtene	$C_{14}H_{28}$	.8390, 0°	" "
Pentadekanaphtene	$C_{15}H_{30}$	.8294, 17°	" "
Nononaphtylene	C_9H_{16}	.8068, 0°	Konowaloff. Ber. 18, ref. 186.
Menthene	$C_{10}H_{18}$	.851, 21°	Walter. A. C. P. 32, 288.
"	"	.814, 15°	Moriya. J. C. S., March, 1881.
"	"	.8226, 0°	
"	"	.8145, 10°	
"	"	.8073, 20°	Atkinson and Yo-
"	"	.7909, 40°	shida. J. C. S.
"	"	.7761, 60°	41, 49.
From oil of calamus	"	.8793, 0°	Kurbatow. J. C. S. (2), 12, 259.
From turpentine chlorhydrate.	"	.852, 19°	Montgolfier. Ber. 12, 376.
Cymhydrene	$C_{10}H_{20}$	.8046, 12°	Gladstone. J. C. S. 49, 616.
Terpilene hydride	"	.8179, 0°	Montgolfier. C. R.
" "	"	.8060, 17°.5	89, 103.
Ethyl camphene	$C_{10}H_{15}.C_2H_5$	.8709, 20°	Spitzer. Ber. 11, 1817.
Isobutyl camphene	$C_{10}H_{15}.C_4H_9$	.8614, 20°	Spitzer. Ber. 11, 1818.
Camphin	$C_{18}H_{32}$	.827, 25°	Claus. J. P. C. 25, 269.
Diterebenthyl	$C_{20}H_{30}$	.9688, 18°	Renard. C. R. 105, 866.
Diterebenthylene	$C_{20}H_{28}$	.9821, 12°	Renard. C. R. 106, 856.
Dicamphene hydride	$C_{20}H_{34}$	.9574, 19°	Montgolfier. C. R. 87, 840.

*According to Konowaloff, the "naphtenes" are identical with the hexhydrides of the benzene series.

Name.	Formula.	Sp. Gravity.	Authority.
Didecene	$C_{20}H_{36}$	.9862, 12°	Renard. C. R. 106, 1086.
Caoutchene	C_4H_8	.65, —2°	Bouchardat. A. C. P. 37, 80.
Tropilidene	C_7H_8	.9129, 0°	Ladenburg. A. C. P. 217, 188.
From copper camphorate	C_8H_{14}	.793	Moitessier. J. 19, 410.
From decomposition of phenol.	$C_{10}H_{12}$	1.012, 17°.5, s.	Roscoe. J. C. S. 47, 669.
Eucalyptene	$C_{12}H_{18}$	.836, 12°	Cloëz. J. 23, 588.
Anthemene	$C_{18}H_{36}$	.942, 15°	Naudin. B. S. C. 41, 483.
Paranicene	$C_{10}H_{12}$	1.24	St. Evre. J. 1, 582.
Lekene	?	.98917	Beilstein and Wiegand. Ber. 16, 1548.
Könlite	$(C_6H_6)_n$	.88	Trommsdorf. A. C. P. 21, 126.
Hartite	$(C_3H_5)_n$	1.046	Haidinger. P. A. 54, 261.
From petroleum	$(C_7H_4)_n$	1.096, 15°	Prunier. Ann. (5), 17, 5.
Carbopetrocene	$(C_{10}H_2)_n$ or $(C_{12}H_2)_n$	1.285, 10°	" "

XLVI. COMPOUNDS CONTAINING C, H, AND O.

1st. Alcohols of the Paraffin Series.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl alcohol	CH_4O	.798, 20°	Dumas and Peligot. Ann. (2), 58, 5.
" "	"	.807, 9°	Deville.
" "	"	.813	Regnault.
" "	"	.82704, 0°	Pierre. Ann. (3), 15, 325.
" "	"	.7938, 25°	Kopp. A. C. P. 55, 166.
" "	"	.81796, 0°	Kopp. P. A. 72, 53.
" "	"	.80307, 16°.9	
" "	"	.8065, 15°	Mendelejeff. J. 13, 7.
" "	"	.8052, 9°.5	Delffs. J. 7, 26.
" "	"	.8142, 0°	Kopp. A. C. P. 94, 257.
" "	"	.7997, 16°.4	
" "	"	.7973, 15°	Graham.
" "	"	.7995, 15°	Duclaux. Ann. (5), 13, 86.
" "	"	.8574, 21°	Linnemann. J. 21, 681.
" "	"	.81571, 10°	Dupré. P. A. 148, 236.
" "	"	.7964, 20°	Landolt.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl alcohol	CH_4O	.7997, 15°	Grodzki and Krämer. Z. A. C. 14, 103.
" "	"	.7984, 15°	Krämer and Grodzki. Ber. 9, 1929.
" "	"	.8098, 0°	Vincent and Delachanal. J. 1880, 896.
" "	"	.8014, 14°	De Heen. Bei. 5, 105.
" "	"	.7475 } 61°.8	Schiff. G. C. I. 13, 177.
" "	"	.7477 } 61°.8	Schiff. G. C. I. 13, 177.
" "	"	.7953, 20°	Brühl. Bei. 4, 781.
" "	"	.8111, 0°	Zander. A. C. P. 224, 88.
" "	"	.7483, 66°.2	Zander. A. C. P. 224, 88.
" "	"	.810, 15°	Regnault and Villejean. C. R. 99, 82.
" "	"	.7961, 18°	Gladstone. Bei. 9, 249.
" "	"	.7923, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.7931, 20°	Traube. Ber. 19, 879.
" "	"	.8612, 0°	Pagliani and Batelli. Bei. 10, 222.
" "	"	.78909, 22°.94	Values given for every 10° from 80° to 238°.5. Ramsay and Young. P. T. 178, 313.
" "	"	.7185, 100°	
" "	"	.6494, 150°	
" "	"	.5525, 200°	
" "	"	.3642, 238°.5	
Ethyl alcohol*	C_2H_6O	.7924, 17°.9	Gay Lussac.
" "	"	.7915, 18°	Dumas and Boullay. P. A. 12, 93.
" "	"	.8095, 0°	Darling.
" "	"	.7996, 15°	Kopp. A. C. P. 55, 166.
" "	"	.8150, 5°—10°	Regnault. P. A. 62, 50.
" "	"	.8113, 10°—15°	
" "	"	.8072, 15°—20°	
" "	"	.81087 } 0°	Kopp. P. A. 72, 62.
" "	"	.8095 } 0°	
" "	"	.79821, 14°	
" "	"	.7990, 14°.8	
" "	"	.8151, 0°	Pierre. Ann. (3), 15, 325.
" "	"	.7938, 15°.5	Fownes. P. T. 1847, 249.
" "	"	.7897 } 21°	Wackenroder. J. 1, 682.
" "	"	.7905 } 21°	
" "	"	.79381, 15°.6	Drinkwater. J. 1, 682.
" "	"	.809, 5°	Delffs. J. 7, 26.
" "	"	.8194, 19°	Wetherill. J. P. C. 60, 202.
" "	"	.7947, 15°	Pouillet. J. 12, 439.
" "	"	.7958, 15°	Mendelejeff. J. 13, 7.
" "	"	.8083, 0°	Mendelejeff. J. 14, 20.
" "	"	.7157, 99°.9	

* For this compound there are so many determinations of specific gravity that absolute completeness with regard to them has not been attempted by the compiler.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl alcohol	C_2H_6O	.6796, 130°.9	Mendelejeff. J. 14, 20.
" "	"	.7946 } 15°	Baumhauer. J. 13, 898.
" "	"	.7947 } 15°	
" "	"	.80625, 0°	Mendelejeff. J. 18, 469.
" "	"	.80207, 5°	
" "	"	.79788, 10°	
" "	"	.79367, 15°	
" "	"	.78945, 20°	
" "	"	.78522, 25°	
" "	"	.78096, 30°	
" "	"	.8086, 19°	Linnemann. J. 21, 413.
" "	"	.8090, 17°	Linnemann. A.C.P. 160, 195.
" "	"	.822, 20°	Pierre and Puchot. Ann. (4), 22, 260.
" "	"	.79481, 11°	Erlenmeyer. A.C.P. 162, 374.
" "	"	.815, 0° 5°	Pierre. C. N. 27, 93.
" "	"	.80214, 1	
" "	"	.7946, 16°.03	Winkelmann. P. A. 150, 592.
" "	"	.7339, 78°	Ramsay. J. C. S. 35, 463.
" "	"	.8120, 0°	Vincent and Delachanal. J. 1880, 396.
" "	"	.7995, 14°	De Heen. Bei. 5, 105.
" "	"	.8019, 20°	Bedson and Williams. Ber. 14, 2550.
" "	"	.7976, 25°	
" "	"	.7381 } 78°.2	Schiff. G. C. I. 13, 177.
" "	"	.7382 } 78°.2	
" "	"	.7402 } 78°.3	
" "	"	.7405 } 78°.3	
" "	"	.7968, 20°	Nasini. G. C. I. 13, 135.
" "	"	.8000, 20°	Brühl. Bei. 4, 781.
" "	"	.79603, 17°.86	Also intermediate values. Drecker. P. A. (2), 20, 870.
" "	"	.77616, 40°.90	
" "	"	.7882, 25°.3	Schall. Ber. 17, 2555.
" "	"	.7899, 23°.4	
" "	"	.79326, 15°	Squibb. C. N. 51, 83.
" "	"	.7906, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.79175, 0°	Pagliani and Battelli. Bei. 10, 222.
" "	"	.70606, 110°	Intermediate values given. Ramsay and Young. P. T. 1886, 129.
" "	"	.5570, 200°	
" "	"	.3109, 242°.9	
Propyl alcohol	C_3H_8O	.8198, 0°	Pierre and Puchot. Ann. (4), 22, 276.
" "	"	.8125, 9°.6	
" "	"	.7797, 50°.1	
" "	"	.7494, 84°	

Name.	Formula.	Sp. Gravity.	Authority.
Propyl alcohol	C_3H_8O	.813, 13°	Chancel. A. C. P. 151, 302.
" "	"	.812, 16°	Chapman and Smith. J. C. S. 22, 194.
" "	"	.823, 0°	Saytzeff. Z. C. 13, 107.
" "	"	.8205, 0°	Rossi. A. C. P. 159, 79.
" "	"	.8066, 15°	Linnemann. A. C. P. 161, 26.
" "	"	.8198, 0°	Pierre. C. N. 27, 93.
" "	"	.80825, 15°	
" "	"	.8044, 20°	Brühl. Ber. 13, 1529.
" "	"	.8091, 14°	De Heen. Bei. 5, 105.
" "	"	.8203, 0°	Naccari and Pagliani. Bei. 6, 88. Values given at several intermediate t°s.
" "	"	.8127, 9°.71	
" "	"	.8001, 25°.46	
" "	"	.7898, 38°.18	
" "	"	.7773, 53°.10	
" "	"	.7646, 67°.46	
" "	"	.7550, 77°.69	
" "	"	.7385, 94°.40	
" "	"	.8177, 0°	Zander. A. C. P. 214, 181.
" "	"	.7369, 97°.4	
" "	"	.8190, 20°	Pagliani. Bei. 7, 450.
" "	"	.7365, 97°.1	Schiff. G. C. I. 13, 177.
" "	"	.7366, 97°.1	
" "	"	.7367, 97°.1	
" "	"	.8049, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.8051, 20°	Traube. Ber. 19, 881.
Isopropyl alcohol	"	.791, 15°	Linnemann. J. 18, 488.
" "	"	.7915, 16°.5	Siersch. A. C. P. 144, 141.
" "	"	.7876, 16°	Linnemann. A. C. P. 161, 18.
" "	"	.7887, 20°	Brühl. A. C. P. 203, 1.
" "	"	.797, 15°	Duclaux. Ann. (5), 13, 89.
" "	"	.7996, 0°	Zander. A. C. P. 214, 181.
" "	"	.7231, 82°.8	
" "	"	.7413, 81°.3	Schiff. G. C. I. 13, 177.
" "	"	.7414, 81°.3	
" "	"	.8076, 20°	Traube. Ber. 19, 882.
Hydrate of isopropyl alcohol.	$(C_3H_8O)_3.\ H_2O$	.800, 15°	Linnemann. A. C. P. 136, 40.
" " "	$(C_3H_8O)_3.\ 2\ H_2O$	.832, 15°	" "
Butyl alcohol. B. 117°.5	$C_4H_{10}O$	.826, 0°	Saytzeff. Z. C. 18, 108.
" "	"	.8239, 0°	Lieben and Rossi. A. C. P. 158, 187.
" "	"	.8105, 20°	
" "	"	.7994, 40°	
" "	"	.7738, 98°.7	
" "	"	.7735, 98°.9	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Butyl alcohol	$C_4H_{10}O$	.8112, 15°	Two samples. Linnemann. Ann. (4), 27, 268.
" "	"	.8135, 22°	
" "	"	.8152, 14°	De Heen. Bei. 5, 105.
" "	"	.806. 15°	Pierre. C. N. 27, 93.
" "	"	.8099, 20°	Two lots. Brühl. A. C. P. 203, 1.
" "	"	.8096, 20°	
" "	"	.8233, 0°	Zander. A. C. P. 224, 88.
" "	"	.7247, 117°.5	
" "	"	.7269, 116°.7	Schiff. G. C. I. 13, 177.
" "	"	.7270, 116°.7	
Isobutyl alcohol. B. 108°	"	.8032, 18°.5	Wurtz. A. C. P. 93, 107.
" "	"	.817, 0°	Pierre and Puchot. J. 21, 434.
" "	"	.809, 11°	
" "	"	.774, 55°	
" "	"	.732, 100°	
" "	"	.8055, 16°.8	Chapman and Smith. J. C. S. 22, 161.
" "	"	.8003, 18°	Linnemann. A. C. P. 160, 195.
" "	"	.8025, 19°	Linnemann. Ann. (4), 27, 268.
" "	"	.8167, 0°	Menschutkin. A. C. P. 195, 351.
" "	"	.8168, 0°	
" "	"	.8020, 20°	Brühl. Ber. 13, 1520.
" "	"	.8062, 20°	
" "	"	.8162, 0°	Naccari and Pagliani. Bei. 6, 89. Values given for several intermediate t°s.
" "	"	.8052, 14°.50	
" "	"	.7927, 30°.71	
" "	"	.7800, 46°.56	
" "	"	.7608, 68°.97	
" "	"	.7497, 80°.86	
" "	"	.7295, 101°.97	
" "	"	.8064, 15°	Duclaux. Ann. (5), 13, 90.
" "	"	.7265, 106°.6	Schiff. G. C. I. 13, 177.
" "	"	.8062, 20°	Landolt. Bei. 7, 846.
" "	"	.79888, 26°.15	Schall. Ber. 17, 2555.
" "	"	.77844, 52°.2	
" "	"	.8024, 20°.5	Gladstone. Bei. 9, 249.
" "	"	.8031, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.8029, 20°	Traube. Ber. 19, 883.
Methylethylcarbinol. B. 99°.	"	.85, 0°	De Luynes. Ann. (4), 2, 424.
"	"	.827, 0°	Lieben. A. C. P. 150, 114.
"	"	.810, 22°	
Trimethylcarbinol. B. 82°.5	"	.8075, 0°	Butlerow. Z. C. 14, 273.
"	"	.7788, 30°	
"	"	.7792, 37°	Linnemann. Ann. (4), 27, 268.
"	"	.7864, 20°	Brühl. A. C. P. 203, 1.
"	"	.7823, 24°	
"	"	.7813, 25°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trimethylcarbinol. B. 82°.5.	$C_4H_{10}O$	.7802, 26°	Brühl. A. C. P. 203, 1.
Hydrate of trimethylcarbinol.	$(C_4H_{10}O)_2 . H_2O$	.8276, 0°	Butlerow. Z. C. 14, 273.
Normal amyl alcohol.	$C_5H_{12}O$	.8296, 0°	Lieben and Rossi. A. C. P. 159, 70.
" " " B. 137	"	.8168, 20°	
" " "	"	.8065, 40°	
" " "	"	.7835, 99°.15	
" " "	"	.8282, 0°	Zander. A. C. P. 224, 88.
" " "	"	.7117, 137°.85	
" " "	"	.8299, 0°	Gartenmeister. A. C. P. 233. 249.
Amyl alcohol.* B. 131°.5	"	.8184, 15°	Cahours. A. C. P. 30, 288.
" "	"	.8137, 15°	Kopp. A. C. P. 55, 166.
" "	"	.8271, 0°	Pierre. J. 1. 62.
" "	"	.8185, 15°	Rieckher. J. 1, 698.
" "	"	.8253, 0°	Kopp. P. A. 72, 227.
" "	"	.8144. 15°.9	
" "	"	.8127, 16°.4	
" "	"	.8145, 16°.4	
" "	"	.818, 14°	Delffs. J. 7, 26.
" "	"	.8248, 0°	Kopp. A. C. P. 94, 257.
" "	"	.8113, 18°.7	
" "	"	.819, 18°	Schiff.
" "	"	.8142, 15°	Mendelejeff. J. 13, 7.
" "	"	.8148, 14°	From two sources. Schorlemmer. J. 19, 527.
" "	"	.8199, 14°	
" "	"	.826, 0°	Pierre and Puchot. Ann. (4), 22, 336.
" "	"	.8204, 15°	Graham.
" "	"	.8148, 15°	Duclaux. Ann. (5), 13, 91.
" "	"	.8135, 20°	Landolt.
" "	"	.8244, 0°	Two products. Erlenmeyer and Hell. A. C. P. 160, 257.
" "	"	.8144, 15°	
" "	"	.8102, 21°.5	
" "	"	.8263, 0°	
" "	"	.8123, 19°.7	
" "	"	.8253, 0°	Pierre. C. N. 27, 93.
" "	"	.8146, 15°	
" "	"	.8255, 0°	Pierre and Puchot. B. S. C. 20, 370.
" " Ordinary	"	.817	Ley. Ber. 6, 1362.
" " Less active	"	.816, 15°	
" " More "	"	.808, 15°	
" "	"	.8123, 20°	Brühl. Bei. 4, 781.
" "	"	.8075, 14°	De Heen. Bei. 5, 105.
" "	"	.8238, 0°	Balbiano. Ber. 9, 1437.
" "	"	.8104, 20°	Two lots. Brühl. A. C. P. 203, 1.
" "	"	.8103, 20°	
" "	"	.8256, 0°	Flawitzky. Ber. 15, 11.
" "	"	.8085, 28°	

* Ordinary, inactive, and unspecified.

Name.	Formula.	Sp. Gravity.	Authority.
Amyl alcohol	$C_5H_{12}O$	.7221 } 123°.2	Schiff. Ber. 14, 2768.
" "	"	.7223 } 123°.2	
" "	"	.7154, 180°.5	Schiff. G. C. I. 13, 177.
" "	"	.8063, 26°.1	Schall. Ber. 17, 2555.
" "	"	.7729, 66°	
" "	"	.8114, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.8121, 20°	Traube. Ber. 19, 883.
" "	"	.8252, 0°	Pagliani and Battelli. Bei. 10, 222.
Methylpropylcarbinol.	"	.8249 } 0°	Wurtz. Z. C. 11, 490.
" B. 119°	"	.8260 } 0°	
"	"	.833, 0°	Le Bel. Z. C. 14, 471.
"			
	"	.8239, 0°	Bieloboubek. Ber. 9, 925.
"	"	.8102, 20°	
"	"	.827, 0°	Wagner and Saytzeff. A. C. P. 179, 320.
"	"	.815, 18°	
Methylisopropylcarbinol.	"	.8308, 0°	Winogradow. A. C. P. 191, 125.
" B. 112°	"	.8219, 19°	
"	"	.838, 0°	Wischnegradsky. A. C. P. 190, 340.
"	"	.819, 19°	
Diethylcarbinol. B. 116°.5	"	.832, 0°	Wagner and Saytzeff. A. C. P. 175, 368.
"	"	.819, 16°	
"	"	.831, 0°	Wagner and Saytzeff. A. C. P. 179, 320.
"	"	.816, 18°	
Dimethylethylcarbinol. B. 102°.5.	"	.829, 0°	Wurtz. A. C. P. 125, 114.
"	"	.828, 0°	Ermolaien. Z. C. 14, 275.
"	"	.8258, 0°	Flawitzky. A. C. P. 179, 349.
"	"	.810, 19°	
"	"	.827, 0°	Wischnegradsky. A. C. P. 190, 334.
"	"	.812, 19°	
"	"	.827, 17°	Münde. Ber. 7, 1870.
"	"	.7241, 101°.6	Schiff. G. C. I. 13, 177.
Normal hexyl alcohol. B. 157°.	$C_6H_{14}O$	.820, 17°	Pelouze and Cahours. J. 16, 527.
" " "	"	.813, 0°	Buff. J. 21, 336.
" " "	"	.819	Franchimont and Zincke. C. N. 24, 263.
" " "	"	.8333, 0°	Lieben and Janecek. J. R. C. 5, 156.
" " "	"	.8204, 20°	
" " "	"	.8107, 40°	
" " "	"	.813, 17°	Frentzel. Ber. 16, 745.
" " "	"	.8312 } 0°	Zander. A. C. P. 224, 88.
" " "	"	.8327 } 0°	
" " "	"	.6958 } 157°	
" " "	"	.6982 } 157°	

Name.	Formula.	Sp. Gravity.	Authority.
Normal hexyl alcohol	$C_6H_{14}O$	.8349, 0°	Gartenmeister. A.C.P. 233, 249.
Methyldiethylcarbinol	"	.8237, 20°	Reformatsky. J. P. C. (2), 36, 340.
"	"	.8194, 25°	
"	"	.8143, 30°	
"	"	.8104, 35°	
Methylpropylcarbylcarbinol. B. 147°.	"	.8396, 0°	Two lots. Lieben and Zeisel. M.C. 4, 32.
	"	.8244, 23°.7	
"	"	.8375, 0°	
"	"	.8257, 17°.6	
Methylbutylcarbinol, or secondary hexyl alcohol. B. 136°.	"	.8327, 0°	Wanklyn and Erlenmeyer. J. 16, 521.
	"	.8209, 16°	
	"	.7482, 99°	
"	"	.8266 } 0°	Two samples. Hecht. A. C. P. 165, 146.
"	"	.8306 } 0°	
"	"	.8307, 18°	Wislicenus. A.C.P. 219, 310.
Methylisobutylcarbinol	"	.8271, 0°	Kuwschinow. Ber. 20, ref. 629.
"	"	.8183, 17°	
Ethylpropylcarbinol.	"	.8335, 0°	Völker. Ber. 8, 1019.
" B. 134°	"	.8188, 20°	
"	"	.83433, 0°	Oechsner de Coninck. C. R. 82, 93.
"	"	.81825, 20°	
Isohexyl or caproyl alcohol. B. 150°.	"	.833, 0°	Faget. J. 6, 504.
"	"	.754, 100°	
" " "	"	.8295, 15°	Köbig. A. C. P. 195, 102.
Dimethylisopropylcarbinol. B. 117°.	"	.8364, 0°	Prianichnikow. Z. C. 14, 275.
"	"	.8387, 0°	Pawlow. A. C. P. 196, 122.
"	"	.8232, 19°	
Methylethylpropyl alcohol.	"	.829, 15°	Romburgh. J. C. S. 52, 228.
Trimethylcarbylmethylcarbinol, or pinacolyl alcohol. B. 120°.5.	"	.8347, 0°	Friedel and Silva. J. C. S. (2), 11, 488.
Normal heptyl alcohol. B. 175°.5.	$C_7H_{16}O$	.792, 16°.5	Wills. J. 6, 508.
" " "	"	.819, 23°	Städeler. J. 10, 361.
" " "	"	.838, 0°	Cross. J. C. S. 32, 123.
" " "	"	.830, 16°	
" " "	"	.824, 27°	
" " "	"	.8342, 0°	Zander. A. C. P. 224, 88.
" " "	"	.6876, 175°.8	
" " "	"	.8356, 0°	Gartenmeister. A. C. P. 233, 249.
Isoheptyl alcohol. ?	"	.8291, 13°.5	Four products from different sources. Schorlemmer. A. C. P. 136, 257.
" " B. 163°–168°	"	.795, 15°	
" "	"	.8479, 16°	
" "	"	.8286, 19°.5	
Dipropylcarbinol. B. 150°	"	.814, 25°	Kurtz. A. C. P. 161, 205.
"	"	.81882, 20°	Ustinoff and Saytzeff. J. P. C. (2), 34, 470.
"	"	.81064, 30°	
"	"	.80677, 35°	
Diisopropylcarbinol. B. 131°—132°.	"	.8323, 17°	Münde. Ber. 7, 1370.

Name.	Formula.	Sp. Gravity.	Authority.
Ethylisobutylcarbinol. B. 147°.5.	$C_7 H_{16} O$	.827, 0°	E. Wagner. B. S. C. 42, 330.
Methylamylcarbinol. B. 149°.	"	.8185, 17°.5	Rohn. A. C. P. 190, 310.
Triethylcarbinol. B. 141°	"	.8593, 0°	Nahapetian. Z. C. 14, 274.
"	"	.83892, 20°	Barataeff and Saytzeff. J. P. C. (2), 34, 465.
"	"	.82992, 30°	Barataeff and Saytzeff. J. P. C. (2), 34, 465.
Methylethylpropylcarbinol.	"	.8238, 20°	Sokolow. Ber. 21, ref. 56.
Normal octyl alcohol. B. 196°.5.	$C_8 H_{18} O$	.830, 16°	Zincke. Z. C. 12, 55.
" " "	"	.8375, 0°	Zander. A. C. P. 224, 88.
" " "	"	.6807, 195°.5	Zander. A. C. P. 224, 88.
" " "	"	.8369, 0°	Gartenmeister. A. C. P. 233, 249.
Methylhexylcarbinol, or capryl alcohol.	"	.823, 17°	Bouis. J. 7, 581.
"	"	.826, 16°	Pelouze and Cahours. J. 16, 529.
"	"	.823, 16°	Neison. J. C. S. (2), 13, 207.
"	"	.6589, 181°	Ramsay. J. C. S. 35, 463.
"	"	.8193, 20°	Brühl. A. C. P. 203, 1.
"	"	.6781, 179°	Schiff. G. C. I. 13, 177.
"	"	.6782, 179°	Schiff. G. C. I. 13, 177.
"	"	.817	Duclaux. Ann. (5), 13, 92.
"Octylene hydrate"	"	.811, 0°	Clermont. A. C. P. 149, 38.
" "	"	.793, 23°	Clermont. A. C. P. 149, 38.
Primary isoöctyl alcohol.	"	.841, 0°	Williams. J. C. S. 35, 125.
" " B. 179°.5	"	.833, 12°	Williams. J. C. S. 35, 125.
" " "	"	.828, 20°	Williams. J. C. S. 35, 125.
" " "	"	.821, 30°	Williams. J. C. S. 35, 125.
" " "	"	.814, 40°	Williams. J. C. S. 35, 125.
" " "	"	.807, 50°	Williams. J. C. S. 35, 125.
" " "	"	.867, 100°	Williams. J. C. S. 35, 125.
Secondary isoöctyl alcohol.	"	.820, 15°	" "
" " B. 161°.5	"	.811, 30°	" "
" " "	"	.801, 40°	" "
" " "	"	.793, 100°	" "
Methyldipropylcarbinol	"	.82357, 20°	Gortaloff and Saytzeff. J. P. C. (2), 33, 202.
"	"	.81506, 30°	Gortaloff and Saytzeff. J. P. C. (2), 33, 202.
"	"	.81080, 35°	Gortaloff and Saytzeff. J. P. C. (2), 33, 202.
Diethylpropylcarbinol	"	.83794, 20°	Sokolow. Ber. 21, ref. 56.
Isodibutol. B. 147°	"	.8417, 0°	Butlerow. J. C. S. 34, 122.
Nonyl alcohol. B. 187°	$C_9 H_{20} O$	.835, 18°.5	Lemoine. B. S. C. 41, 161.
Normal nonyl alcohol	"	.8415, 0°	Krafft. Ber. 19, 2221.
" " "	"	.8346, 10°	Krafft. Ber. 19, 2221.
" " "	"	.8279, 20°	Krafft. Ber. 19, 2221.
Ethyldipropylcarbinol	"	.83368, 20°	Tschebotareff and Saytzeff. J. P. C. (2), 33, 193.
"	"	.82583, 30°	Tschebotareff and Saytzeff. J. P. C. (2), 33, 193.
"	"	.82190, 35°	Tschebotareff and Saytzeff. J. P. C. (2), 33, 193.

Name.	Formula.	Sp. Gravity.	Authority.
Ethylhexylcarbinol.	$C_9H_{20}O$	.839, 0°	Wagner. Ber. 17, ref. 816.
" B. 195°	"	.825, 20°	
Normal decyl alcohol	$C_{10}H_{22}O$	.8389, 7°	Krafft. Ber. 16, 1714.
" " "	"	.8297, 20°	
" " "	"	.7734, 98°.7	
Decyl alcohol. B. 200°	"	.858, 18°.5	Lemoine. B. S. C. 41, 161.
Isodecyl alcohol. B. 208°	"	.8569, 0°	Borodin. J. 17, 338.
Propylhexylcarbinol. B. 210°.	"	.839, 0°	E. Wagner. B. S. C. 42, 330.
Methylnonylcarbinol. B. 228°.	$C_{11}H_{24}O$	.8268, 19°	Giesecke. Z. C. 13, 431.
Normal dodecyl alcohol	$C_{12}H_{26}O$	.8309, 24°	Krafft. Ber. 16, 1714.
" " "	"	.8201, 40°	
" " "	"	.7781, 99°	
Normal tetradecyl alcohol.	$C_{14}H_{30}O$	.8236, 38°	" "
" " "	"	.8153, 50°	
" " "	"	.7813, 98°.9	
Isomer of myristic alcohol. B. 270°—275°.	"	.8368, 15°	Perkin, Jr. J. C. S. 43, 77.
	"	.8301, 30°	
" " "	"	.8279, 35°	
Normal hexdecyl alcohol	$C_{16}H_{34}O$	.8176, 49°.5	Krafft. Ber. 16, 1714.
" " "	"	.8105, 60°	
" " "	"	.7837, 98°.7	
" " " Cetyl alcohol	"	.8185, 49°.5	
Normal octodecyl alcohol	$C_{18}H_{38}O$	.8124, 59°	" "
" " "	"	.8048, 70°	
" " "	"	.7849, 99°.1	

2d. Oxides of the Paraffin Series.*

Name.	Formula.	Sp. Gravity.	Authority.
Methyl ethyl oxide	$CH_3 . C_2H_5 . O$	.7252, 0°	Dobriner. A. C. P. 243, 1.
" " "	"	.7127, 10°.8	
Ethyl oxide, or ether	$(C_2H_5)_2O$	.7119, 24°.8	Gay Lussac.
" " "	"	.713, 20°	Dumas and Boullay. Ann. (2), 36, 294.
" " "	"	.733, 12°.5	Muncke. M. St. P. Sav. Et. 1, 1831, 249.
" " "	"	.73568, 0°	Kopp. P. A. 72, 231.
" " "	"	.72895, 6°.9	
" " "	"	.7297, 5°—10°	Regnault. P. A. 62, 50.
" " "	"	.7241, 10°—15°	
" " "	"	.7185, 15°—20°	
" " "	"	.73574, 0°	Pierre. C. R. 27, 213.
" " "	"	.728, 7°	Delffs. J. 7, 26.

* All of Dobriner's ethers represent normal paraffins.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl oxide, or ether	$(C_2H_5)_2O$	.73644, 0°	Intermediate values given. Mendelejeff. A. C. P. 119, 1.
" " "	"	.63987, 78°.3	
" " "	"	.60896, 99°.9	
" " "	"	.55958, 131°.6	
" " "	"	.51735, 157°	
" " "	"	.7271, 10°.2	Matthiessen and Hockin.
" " "	"	.7204, 15°.8	
" " "	"	.6956, 34°.5	Ramsay. J. C. S. 35, 463.
" " "	"	.7157, 20°	Brühl. Ber. 13, 1530.
" " "	"	.7197, 15°	Buchan. C. N. 51, 94.
" " "	"	.73128, 4°	Squibb. C. N. 51, 67 and 76.
" " "	"	.71888, 15°	
" " "	"	.73590, 0°	Oudemans. Ber. 19, ref. 2.
" " "	"	.7304, 5°	
" " "	"	.7248, 10°	
" " "	"	.7192, 15°	
" " "	"	.7135, 20°	
" " "	"	.7077, 25°	
" " "	"	.7019, 30°	
" " "	"	.6960, 35°	
" " "	"	.6704, 50°	Also values for every 5° from 0° to 193°. Ramsay and Young. P. T. 178, 85.
" " "	"	.6105, 100°	
" " "	"	.5179, 150°	
" " "	"	.3030, 193°	
" " "	"	.2463, at critical t°.	Ramsay and Young. P. M. 1887, 458.
Methyl propyl oxide	$CH_3.C_3H_7.O$	.7471, 0°	Dobriner. A. C. P. 243, 1.
" " "	"	.70415, 38°.9	
Ethyl propyl oxide	$C_2H_5.C_3H_7.O$	.7386, 20°	Brühl. Bei. 4, 779.
" " "	"	.7545, 0°	Dobriner. A. C. P. 243, 1.
" " "	"	.6871, 63°.6	
Ethyl isopropyl oxide	"	.7447, 0°	Markownikoff. A. C. P. 138, 374.
Methyl butyl oxide	$CH_3.C_4H_9.O$	.7635, 0°	Dobriner. A. C. P. 243, 1.
" " "	"	.6901, 70°.8	
Propyl oxide	$(C_3H_7)_2O$	.7633, 0°	Zander. A. C. P. 214, 181.
" "	"	.6743, 90°.7	
Isopropyl oxide	"	.7435, 0°	" "
" "	"	.6715, 69°	
Ethyl butyl oxide	$C_2H_5.C_4H_9.O$	.7694, 0°	Lieben and Rossi. A. C. P. 158, 137.
" " "	"	.7522, 20°	
" " "	"	.7367, 40°	
" " "	"	.761, 0°	Saytzeff.
" " "	"	.7680, 0°	Dobriner. A. C. P. 243, 1.
" " "	"	.6785, 91°.4	
Ethyl isobutyl oxide	"	.7507, 0°	Wurtz. J. 7, 574.
Methyl amyl oxide	$CH_3.C_5H_{11}.O$	.6871, 91°	Schiff. Bei. 9, 559.
Ethyl isoamyl oxide	$C_2H_5.C_5H_{11}.O$	.8036, 14°.7	Mendelejeff. J. 13, 7.
" " "	"	.764, 18°	Reboul and Truchot. J. 20, 582.
Tertiary ethyl amyl oxide	"	.759, 21°	" "
" " " "	"	.7785, 0°	Kondakoff. Ber. 20, ref. 549.
" " " "	"	.751, 18°	
Propyl butyl oxide	$C_3H_7.C_4H_9.O$	.7773, 0°	Dobriner. A. C. P. 243, 1.
" " "	"	.6638, 117°.1	

Name.	Formula.	Sp. Gravity.	Authority.
Butyl oxide	$(C_4H_9)_2O$	.784, 0°	
" "	"	.7685, 20°	Lieben and Rossi.
" "	"	.7555, 40°	A. C. P. 165, 109.
" "	"	.7865, 0°	Dobriner. A. C. P.
" "	"	.6575, 140°.9	243, 1.
Isobutyl oxide	"	.7697, 0°	
" "	"	.7294, 46°.4	
" "	"	.7040, 74°.3	
" "	"	.766, 0°	Puchot. Ann. (5),
" "	"	.724, 48°.75	28, 521–528.
" "	"	.770, 0°	Four samples.
" "	"	.734, 42°	
" "	"	.7678, 0°	
Secondary butyl oxide	"	.756, 21°	Kessler. A. C. P. 175, 56.
Ethyl hexyl oxide	$C_2H_5.C_6H_{13}.O$	.7752, 16°.5	
" " "	"	.7638, 30°	Schorlemmer. J. C.
" " "	"	.7344, 63°	S. 19, 357.
" " "	"	.776, 13°	Reboul and Truchot. J. 20, 582.
Diethyl-ethyl oxide	"	.7865, 0°	
" " "	"	.7702, 20°	Lieben. A. C. P.
" " "	"	.7574, 40°	178, 14.
Methyl heptyl oxide	$CH_3.C_7H_{15}.O$	.7953, 0°	Dobriner. A. C. P.
" " "	"	.6667, 149°.8	243, 1.
Ethyl heptyl oxide	$C_2H_5.C_7H_{15}.O$	.7949, 0°	" "
" " "	"	.65065, 166°.6	
" " "	"	.790, 16°	Cross. J. C. S. 31,
" " "	"	.791, 16°	123.
Methyl octyl oxide	$CH_3.C_8H_{17}.O$	.8014, 0°	Dobriner. A. C. P.
" " "	"	.65386, 173°	243, 1.
Methyl capryl oxide	"	.830, 16°.5	Wills. J. 6, 510.
Amyl oxide	$(C_5H_{11})_2O$	.779	Rieckher. J. 1, 698.
" "	"	.7994, 0°	Wurtz. J. 9, 654.
Propyl heptyl oxide	$C_3H_7.C_7H_{15}.O$	.7987, 0°	Dobriner. A. C. P.
" " "	"	.6420, 187°.6	243, 1.
Ethyl octyl oxide	$C_2H_5.C_8H_{17}.O$	.794, 17°	Möslinger. Ber. 9, 1003.
" " "	"	.8008, 0°	Dobriner. A. C. P.
" " "	"	.6890, 189°.2	243, 1.
Ethyl capryl oxide	"	.791, 16°	Wills. J. 6, 510.
Butyl heptyl oxide	$C_4H_9.C_7H_{15}.O$	.8028, 0°	Dobriner. A. C. P.
" " "	"	.6327, 205°.7	243, 1.
Propyl octyl oxide	$C_3H_7.C_8H_{17}.O$	.8039, 0°	" "
" " "	"	.6300, 207°	
Butyl octyl oxide	$C_4H_9.C_8H_{17}.O$	.8069, 0°	" "
" " "	"	.6277, 225°.7	
Amyl capryl oxide	$C_5H_{11}.C_8H_{17}.O$	.608, 20°	Wills. J. 6, 510.
Normal heptyl oxide	$(C_7H_{15})_2O$	.8152, 0°	Dobriner. A. C. P.
" " "	"	.6055, 261°.9	243, 1.
Heptyl octyl oxide	$C_7H_{15}.C_8H_{17}.O$	.8182, 0°	" "
" " "	"	.6038, 278°.8	
Normal octyl oxide	$(C_8H_{17})_2O$	.8035	Möslinger. Ber. 9,
" " "	"	.8050, 17°	1001.
" " "	"	.82035, 0°	Dobriner. A. C. P.
" " "	"	.5983, 291°.7	243, 1.

3d. The Fatty Acids.

Name.	Formula.	Sp. Gravity.	Authority.
Formic acid	$C H_2 O_2$	1.2353	Liebig. Gm. H.
" "	"	1.2227, 0°	Kopp. P. A. 72, 248.
" "	"	1.2067, 13°.7	
" "	"	1.2211, 20°	Landolt. P. A. 117, 353.
" "	"	1.2211, 20°	Semenoff. Ann. (4), 6, 115.
" "	"	1.2165, 20°	
" "	"	1.24482, 0°	Petterson. U. N. A. 1879.
" "	"	1.2188, 20°	Brühl. Bei. 4, 781.
" "	"	1.2415, 0°	Zander. A. C. P. 224, 88.
" "	"	1.1175, 100°.8	
" "	"	1.2191, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	1.2182, 22°	Lüdeking. P. A. (2), 27, 72.
" "	"	1.1170, 100°.3	Schiff. Ber. 19, 560.
" "	"	1.2190, 20°	Traube. Ber. 19, 884.
" "	"	1.22734, 15°	Perkin. J. C. S. 49, 777.
Acetic acid	$C_2 H_4 O_2$	1.0630, 16°	Mollerat. Ann. (1), 68, 88.
" "	"	1.0622	Sebille-Auger. Watts' Dict.
" "	"	1.0635, 15°	Mohr. A. C. P. 31, 277.
" "	"	1.100, 8°.5, s.	Persoz. Watts' Dict.
" "	"	1.0650, 13°, l.	
" "	"	1.0647, 5°–10°	Regnault. P. A. 62, 50.
" "	"	1.0591, 10°–15°	
" "	"	1.0535, 15°–20°	
" "	"	1.08005, 0°	Kopp. P. A. 72, 253.
" "	"	1.06195, 17°	
" "	"	1.0635, 10°	Delffs. A. C. P. 92, 277.
" "	"	1.0607, 15°	Mendelejeff. J. 13, 7.
" "	"	1.0563, 15°.5	Roscoe. J. C. S. 15, 270.
" "	"	1.0565, 15°.5	
" "	"	1.0514, 20°	Landolt. P. A. 117, 353.
" "	"	1.05533, 15°	Oudemans. Z. C. 1866, 750.
" "	"	1.0626, 20°	Linnemann. A. C. P. 160, 216.
" "	"	1.0502	Landolt. Ber. 9, 907.
" "	"	1.0490, 18°	Kohlrausch. P. A. 159, 240.
" "	"	.9325, 113°	Ramsay. J. C. S. 35, 463.
" "	"	1.0635, 15°	Duclaux. Ann. (5), 13, 95.
" "	"	1.1149, 0°, s.	Petterson. U.N.A. 1879.
" "	"	1.0576, 12°.79	
" "	"	1.0543, 15°.97	
" "	"	1.0503, 19°.03	

Name.	Formula.	Sp. Gravity.	Authority.
Acetic acid	$C_2H_4O_2$	1.0559, 20°	Bedson and Williams. Ber. 14, 2550.
" "	"	1.0495, 20°	Brühl. Bei. 4, 781.
" "	"	1.0701, 0°	Zander. A. C. P. 224, 88.
" "	"	.9372, 118°.1	
" "	"	1.0532, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	1.0465, 22°	Lüdeking. P. A. (2), 27, 72.
" "	"	1.05704, 15°	Perkin. J. C. S. 49, 777.
Propionic acid	$C_3H_6O_2$	1.0161, 0°	Kopp. A. C. P. 95, 307.
" "	"	.9911, 25°.2	
" "	"	.9963, 20°	Landolt. P. A. 117, 353.
" "	"	.992, 18°	Linnemann. J. 21, 483.
" "	"	.9961, 19°	Linnemann. A. C. P. 160, 195.
" "	"	1.0143, 0°	Pierre and Puchot. B. S. C. 18, 453.
" "	"	.9607, 49°.6	
" "	"	.9062, 99°.8	
" "	"	.9946, 20°	Brühl. Ber. 13, 1530.
" "	"	1.0199, 0°	Zander. A. C. P. 214, 181.
" "	"	.8657, 140°.7	
" "	"	1.0133, 0°	Zander. A. C. P. 224, 88.
" "	"	.8589 } 140°.5	
" "	"	.8599 } 140°.5	
" "	"	.9939, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.9902, 25°	Lüdeking. P. A. (2), 27, 72.
" "	"	.9956, 20°	Traube. Ber. 19, 885.
" "	"	1.0089, 0°	Renard. C. R. 103, 158.
" "	"	.9904, 18°	
" "	"	.99833, 15°	Perkin. J. C. S. 49, 777.
Butyric acid. B. 163°	$C_4H_8O_2$	.9675, 25°	Chevreul.
" "	"	.968, 15°	Pelouze and Gélis. P. A. 59, 625.
" "	"	.98165, 0°	Pierre. C. R. 27, 213.
" "	"	.9673, 15°	Mendelejeff. J. 13, 7.
" "	"	.9610, 20°	Landolt. P. A. 117, 353.
" "	"	.9850, 18°.5	Bulk. A. C. P. 139, 62.
" "	"	.9580, 14°	Linnemann. A. C. P. 160, 195.
" "	"	.9601, 14°	Linnemann. Ann. (4), 27, 268.
" "	"	.974, 15°	Graham. A. C. P. 123, 99.
" "	"	.9587, 20°	Brühl. A. C. P. 203, 1.
" "	"	.9594, 20°	Landolt. Bei. 7, 845.
" "	"	.8141, 161°.5	Schiff. G. C. I. 13, 177.

Name.	Formula.	Sp. Gravity	Authority.
Butyric acid	$C_4H_8O_2$	.9746 } 0°	Zander. A. C. P. 224, 88.
" "	"	.9781	
" "	"	.8099 } 162°.5	
" "	"	.8120	
" "	"	.9603, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.9549, 25°	Lüdeking. P. A. (2), 27, 72.
" "	"	.9809, 0°	Gartenmeister. A. C. P. 233, 249.
" "	"	.9624, 20°	Traube. Ber. 19, 885.
Isobutyric acid. B. 154°	"	.98862, 0°	Kopp. P. A. 72, 258.
" "	"	.9739, 15°	
" "	"	.973, 7°	Delffs. A. C. P. 92, 277.
" "	"	.9598, 0°	Markownikoff. A. C. P. 138, 368.
" "	"	.9208, 50°	
" "	"	.8965, 100°	
" "	"	.9503, 20°	Linnemann. Ann. (4), 27, 268.
" "	"	.9697, 0°	Pierre and Puchot. B. S. C. 19, 72.
" "	"	.9160, 52°.6	
" "	"	.8665, 99°.8	
" "	"	.8220, 139°.8	
" "	"	.9490, 20°	Brühl. Ber. 18, 1529.
" "	"	.9515, 20°	Brühl. A. C. P. 200, 180.
" "	"	.8087, 153°	Schiff. G. C. I. 13, 177.
" "	"	.9651, 0°	Zander. A. C. P. 224, 88.
" "	"	.8054, 154°	
" "	"	.9519, 20°	Traube. Ber. 19, 886.
Normal valeric acid.	$C_5H_{10}O_2$	.9577, 0°	Lieben and Rossi. A. C. P. 159, 58.
" " " B. 185°	"	.9415, 20°	
" " "	"	.9284, 40°	
" " "	"	.9034, 99°.3	
" " "	"	.945, 17°.5	Cahours and Demarçay. C. R. 89, 331.
" " "	"	.7569, 195°	Ramsay. J. C. S. 35, 463.
" " "	"	.9608, 0°	Kehrer and Tollens. A. C. P. 206, 239.
" " "	"	.9448, 20°	
" " "	"	.9562, 0°	Zander. A. C. P. 224, 88.
" " "	"	.7828, 185°.4	
" " "	"	.9568, 0°	Gartenmeister. A. C. P. 233, 249.
Isovaleric acid.* B. 175°	"	.941, 14°	Chevreul.
" "	"	.932, 28°	
" "	"	.944, 10°	Trommsdorf. A. C. P. 6, 176.
" "	"	.930, 12.°5	Trautwein. Gm. H.
" "	"	.937, 16°.5	Dumas and Stas. J. P. C. 21, 267.
" "	"	.9403, 15°	Personne. J. 7, 653.
" "	"	.9555, 0°	Kopp. A. C. P. 95, 307.
" "	"	.9378, 19°.6	

* Including ordinary and unspecified valerianic acid.

Name.	Formula.	Sp. Gravity.	Authority.
Isovaleric acid	$C_5H_{10}O_2$	.935, 15°	Delffs. A. C. P. 92, 277.
" "	"	.9558, 15°	Mendelejeff. J. 13, 7.
" "	"	.9313, 20°	Landolt. P. A. 117, 353.
" "	"	.95357, 0°	Frankland and Duppa. J. 20, 396.
" "	"	.9470, 0°	Pierre and Puchot. B. S. C. 19, 72.
" "	"	.8972, 54°.65	
" "	"	.8542, 99°.9	
" "	"	.8095, 147°.5	
" "	"	.9465, 0°	From different sources. Erlenmeyer and Hell. A. C. P. 160, 257.
" "	"	.9285, 20°.2	
" "	"	.9468, 0°	
" "	"	.9295, 19°.7	
" "	"	.9462, 0°	
" "	"	.9299, 18°.8	
" "	"	.917, 15°	Ley. Ber. 6, 1362.
" "	"	.93087, 17°.4	Schmidt and Sachtleben.
" "	"	.9345, 15°	Poetsch. A. C. P. 218, 56.
" "	"	.9297, 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.941, 16°	Renard. Ann. (6), 1, 223.
" "	"	.9318, 20°	Traube. Ber. 19, 886.
Ethylmethylacetic acid, or active valeric acid. B. 172°.5.	"	.9505, 0°	Erlenmeyer and Hell. A. C. P. 160, 257.
	"	.9331, 19°.5	
" " "	"	.938, 24°	Saur. A. C. P. 188, 275.
" " "	"	.917, 15°	Ley. Ber. 6, 1362.
" " "	"	.941, 21°	Pagenstecher. A. C. P. 195, 118.
" " "	"	.948, 14°.5	Lescoeur. J. C. S. 31, 589.
" " "	"	.9405, 17°	Schmidt. Ber. 12, 257.
Trimethyl acetic acid	"	.944, 0°	Butlerow. Ber. 7, 728.
" "	"	.905, 50°	
Normal caproic acid.	$C_6H_{12}O_2$	.922, 26°	Chevreul.
" " B. 205°	"	.931, 15°	Fehling. A. C. P. 53, 406.
" " "	"	.9449, 0°	Lieben and Rossi. A. C. P. 159, 70.
" " "	"	.9294, 20°	
" " "	"	.9172, 40°	
" " "	"	.8947, 99°.1	
" " "	"	.9438, 0°	Lieben. A. C. P. 170, 89.
" " "	"	.928, 20°	
" " "	"	.9164, 40°	
" " "	"	.933, 23°	Cahours and Demarçay. C. R. 89, 331.
" " "	"	.9446, 0°	Zander. A. C. P. 224, 88.
" " "	"	.7589, 205°	
" " "	"	.9449 0°	Gartenmeister. A. C. P. 233, 249.
" " "	"	.9453 0°	

Name.	Formula.	Sp. Gravity.	Authority.
Isocaproic acid. B. 199°	$C_6H_{12}O_2$	.9252, 20°	Landolt. P. A. 117, 353.
" "	"	.9237, 20°	Brühl. Bei. 4, 781.
Diethylacetic acid. B. 190°	"	.925, 27°	Sticht. J. 21, 522.
" "	"	.945	Schnapp. Ber. 10, 1954.
" "	"	.9355, 0°	Saytzeff. Ber. 11, 512.
" "	"	.9196, 18	
Methylpropylacetic acid.	"	.9414, 0°	" "
" B. 193°	"	.9279, 18°	
" "	"	.9281, 25°	Liebermann and Scheibler. Ber. 16, 1823.
" "	"	.9286, 15°	Liebermann and Kleemann. Ber. 17, 918.
Methylisopropylacetic acid	"	.928, 15°	Romburgh. J. C. S. 52, 232.
Methylethylpropionic acid	"	.930, 15°	Romburgh. J. C. S. 52, 228.
Oenanthic acid. B. 223°	$C_7H_{14}O_2$	.9167, 24°	Städeler. J. 10, 360.
" "	"	.9179, 18°	Landolt. P. A. 117, 353.
" "	"	.9175, 20°	
" "	"	.9212, 24°	Franchimont. A. C. P. 165, 237.
" "	"	.9345, 0°	Grimshaw and Schorlemmer. A. C. P. 170, 137.
" "	"	.9278, 8°.5	
" "	"	.9208, 16°	
" "	"	.9110, 28°	
" "	"	.9359, 0°	" "
" "	"	.9348, 9°	
" "	"	.9235, 28°	
" "	"	.916, 21°	Mehlis. A.C.P. 185, 362.
" "	"	.935, 0°	Lieben and Janecek. J. R. C. 5, 156.
" "	"	.9198, 20°	
" "	"	.9084, 40°	
" "	"	.924, 21°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.9160, 20°	Brühl. Bei. 4, 781.
" "	"	.9313, 0°	Zander. A.C.P. 224, 88.
" "	"	.7429, 223°.2	
" "	"	.9333, 0°	Gartenmeister. A.C. P. 233, 249.
Isoheptylic acid. B. 211°.5	"	.9305, 0°	Hecht. A. C. P. 209, 315.
" "	"	.9138, 21°	
" "	"	.8496, 100°	
Isoamylacetic acid. B. 217°	"	.9260, 15°	Poetsch. A. C. P. 218, 56.
Caprylic acid. B. 236°.5	$C_8H_{16}O_2$	.911, 20°	Fehling. A. C. P. 58, 401.
" "	"	.905, 21°	Perrot. J. 10, 353.
" "	"	.901, 18°	Fischer. A. C. P. 118, 307.
" "	"	.923, 17°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.9270, 0°	Zander. A.C. P. 224, 88.
" "	"	.7264, 236°.5	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Caprylic acid	$C_8H_{16}O_2$	.9288, 0°	Gartenmeister. A.C. P. 233, 249.
Isoöctylic acid. B. 219°	"	.926, 0°	Williams. J. C. S. 35, 125.
" "	"	.911, 20°	
" "	"	.903, 30°	
" "	"	.893, 40°	
" "	"	.885, 50°	
" "	"	.846, 100°	
Dipropylacetic acid. B. 219°.5.	"	.9215, 0°	Burton. A. C. J. 3, 389.
Pelargonic acid. B. 253°	$C_9H_{18}O_2$	.903, 21°	Perrot. J. 10, 353.
" "	"	.9065, 17°	Franchimont and Zincke. C. N. 25, 57.
" "	"	.90656	From six different sources. Bergmann. Arch. Pharm. 22, 331.
" "	"	.90638	
" "	"	.90630	
" "	"	.90639	
" "	"	.90621	
" "	"	.90609	
" "	"	.9109, 12°.5	Krafft. Ber. 15, 1687.
" "	"	.9068, 17°.5	
" "	"	.9433, 99°.3	
" "	"	.9082, 0°	Gartenmeister. A. C. P. 233, 249.
Isononylic acid. B. 245°	"	.90325, 18°	Kullhem. A. C. P. 173, 319.
Rutylic acid	$C_{10}H_{20}O_2$	.930, 37°, l.	Fischer. A. C. P. 118, 307.
Lauric acid	$C_{12}H_{24}O_2$	.883, 20°, s.	Görgey. A. C. P. 66, 306.
Stearic acid	$C_{18}H_{36}O_2$	1.01, 0°, s.	Saussure. Watts' Dict.
" "	"	.854, l.	
" "	"	a1.00, 9°	Kopp. J. 8, 43.
" "	"	.8521, 69°.5	Schiff. A. C. P. 223, 247.

4th. Anhydrides of the Fatty Acids.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetic anhydride	$C_4H_6O_3$	1.073, 20°.5	Gerhardt. J. 5, 451.
" "	"	1.0969, 0°	Kopp. A. C. P. 94, 257.
" "	"	1.0799, 15°.2	
" "	"	1.075, 15°	Schlagdenhauffen.
" "	"	1.0793, 15°	Mendelejeff. J. 13, 7.
" "	"	1.0787, 20°	Nasini. Ber. 14, 1513.
" "	"	1.0816, 20°	Brühl. Bei. 4, 782.
Propionic anhydride	$C_6H_{10}O_3$	1.01, 18°	Linnemann. J. 21, 433.
" "	"	1.0169, 15°	Perkin. J. C. S. (2), 13, 11.
Butyric anhydride	$C_8H_{14}O_3$	.978, 12°.5	Gerhardt. J. 5, 452.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isobutyric anhydride	$C_8 H_{14} O_3$	.9574, 16°.5	Toennies and Staub. Ber. 17, 851.
Valeric anhydride	$C_{10} H_{18} O_3$	.934, 15°	Watts' Dictionary.
Oenanthic anhydride	$C_{14} H_{26} O_3$	.91, 14°	Malerba. J. 7, 444.
" "	"	.932, 21°	Mehlis. A. C. P. 185, 371.

5th. Ethers of the Series $C_n H_{2n} O_2$.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl formate	$C H_3 . C H O_2$	.9984, 0°	
" "	"	.9776, 15°.3	Kopp. P. A. 72, 261.
" "	"	.9766, 16°	
" "	"	.9928, 0°	Volhard. A. C. P. 176, 135.
" "	"	.9797, 15°	Kraemer and Grodzki. Ber. 9, 1928.
" "	"	.9482, 33°	Ramsay. J. C. S. 35, 463.
" "	"	.9767, 14°	De Heen. Bei. 5, 105.
" "	"	.9566, 32°.3	Schiff. G. C. I. 13, 177.
" "	"	.99839, 0°	Elsässer. A. C. P.
" "	"	.95196, 32°.3	218, 302.
Ethyl formate	$C_2 H_5 . C H O_2$	.9157, 18°	Gehler. See Böttger.
" "	"	.912	Liebig. Quoted by Kopp.
" "	"	.94474, 0°	Kopp. P. A. 72, 266.
" "	"	.92546, 15°.7	
" "	"	.9394, 0°	" "
" "	"	.9188, 17°	
" "	"	.93565, 0°	Pierre. C. R. 27, 213.
" "	"	.917	Löwig. J. 14, 599.
" "	"	.8649, 55°	Ramsay. J. C. S. 35, 463.
" "	"	.9064, 20°	Brühl. Ber. 13, 1530.
" "	"	.9214, 14°	De Heen. Bei. 5, 105.
" "	"	.9367, 0°	
" "	"	.9238, 10°.84	
" "	"	.9122, 20°.03	Several intermediate values given. Naccari and Pagliani. Bei. 6, 89.
" "	"	.8959, 32°.79	
" "	"	.8865, 40°.02	
" "	"	.8740, 49°.76	
" "	"	.8707, 51°.94	
" "	"	.8730, 53°.4	Schiff. G. C. I. 13,
" "	"	.8731	177.
" "	"	.93757, 0°	Elsässer. A. C. P.
" "	"	.86667, 54°.4	218, 302.
" "	"	.9194, 20°	Winkelmann. P. A.
" "	"	.9152	(2), 26, 105.
" "	"	.9445, 0°	Gartenmeister. A. C. P. 233, 249.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propyl formate	$C_3 H_7 . C H O_2$	.9197, 0°	Pierre and Puchot. Z. C. 12, 660.
" "	"	.877, 38°.5	
" "	"	.836, 72°.5	
" "	"	.9188, 0°	Pierre and Puchot. Ann. (4), 22, 288.
" "	"	.8761, 38°.5	
" "	"	.835, 72°.5	
" "	"	.9026, 14°	De Heen. Bei. 5, 105.
" "	"	.91838, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.82146, 81°	
" "	"	.9023 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.9125 20°	
" "	"	.9250, 0°	Gartenmeister. A.C. P. 233, 249.
" "	"	.8270, 81°	
Butyl formate	$C_4 H_9 . C H O_2$	.9108, 0°	" "
" "	"	.7972, 106°.9	
Isobutyl formate	"	.8845, 0°	Pierre and Puchot. Ann. (4), 22, 319.
" "	"	.850, 34°	
" "	"	.8224, 59°.8	
" "	"	.7962, 83°.4	
" "	"	.8650, 14°	De Heen. Bei. 5, 105.
" "	"	.7784, 98°	Schiff. G. C. I. 13, 177.
" "	"	.88543, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.78287, 97°.9	
Normal amyl formate	$C_5 H_{11} . C H O_2$	.9018, 0°	Gartenmeister. A.C. P. 233, 249.
" " "	"	.7692, 130°.4	
Isoamyl formate	"	.884, 15°	Delffs. J. 7, 26.
" "	"	.8945, 0°	Kopp. A. C. P. 96.
" "	"	.8743, 21°	
" "	"	.8809, 15°	Mendelejeff. J. 13, 7.
" "	"	.8816, 14°	De Heen. Bei. 5, 105.
" "	"	.7554, 123°.5	Schiff. G. C. I. 13, 177.
" "	"	.8802, 20°	Brühl. Bei. 4, 782.
" "	"	.894378, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.77027, 123°.3	
Normal hexyl formate	$C_6 H_{13} . C H O_2$	.8495, 17°	Frentzel. Ber. 16, 745.
" " "	"	.8977, 0°	Gartenmeister. A.C. P. 233, 249.
" " "	"	.7484, 153°.6	
Normal heptyl formate	$C_7 H_{15} . C H O_2$	.8937, 0°	" "
" " "	"	.7308, 176°.7	
Normal octyl formate	$C_8 H_{17} . C H O_2$	.8929, 0°	" "
" " "	"	.7156, 198°.1	
Methyl acetate	$C H_3 . C_2 H_3 O_2$	.919, 22°	Dumas and Peligot. P. A. 36, 117.
" "	"	.9328, 0°	Kopp. A. C. P. 96.
" "	"	.9085, 21°	
" "	"	.9562, 0°	Kopp. P. A. 72, 271.
" "	"	.93755, 15°.6	
" "	"	.86684, 0°	Pierre. C. R. 27, 213.
" "	"	.940	Grodzki and Kraemer. Z. A. C. 14, 103.
" "	"	.9039, 20°	Brühl. Ber. 13, 1530.
" "	"	.9319, 14°	De Heen. Bei. 5, 105.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl acetate	$CH_3.C_2H_3O_2$	.8825 } 55°	Schiff. G. C. I. 13, 177.
" "	"	.8826 } 55°	
" "	"	.95774, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.88086, 57°.5	
" "	"	.9424, 0°	Winkelmann. P. A. (2), 26, 105.
" "	"	.9238, 19°.2	Henry. C. R. 101, 250.
" "	"	.9643, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.8873, 57°.3	
Ethyl acetate	$C_2H_5.C_2H_3O_2$	.866, 7°	Thénard. Gm. H.
" "	"	.89, 15°	Liebig.
" "	"	.9051, 0°	Frankenheim. P. A. 72, 427.
" "	"	.91046, 0°	Kopp. P. A. 72, 276.
" "	"	.89277, 15°.7	
" "	"	.8926, 15°.9	
" "	"	.90691, 0°	Pierre. C. R. 27, 213.
" "	"	.906, 17°.5	Marsson. J. 4, 514.
" "	"	.903, 17°	Becker. J. 5, 563.
" "	"	.932, 20°	Goessmann. J. 5, 563.
" "	"	.9055, 17°.5	Marsson. J. 6, 501.
" "	"	.8922, 15°	Delffs. J. 7, 26.
" "	"	.8981, 15°	Mendelejeff. J. 13, 7.
" "	"	.903, 0°	Pierre and Puchot. Ann. (4), 22, 261.
" "	"	.868, 24°	Léblanc. Ann. (3), 10, 198.
" "	"	.9068, 15°	Linnemann. A. C. P. 160, 195.
" "	"	.9007, 20°	Brühl. Ber. 13, 1530.
" "	"	.9026, 14°	De Heen. Bei. 5, 105.
" "	"	.8220, 74°.3	Schiff. Ber. 14, 2766.
" "	"	.9227, 0°	Several intermediate values given. Naccari and Pagliani. Bei. 6, 89.
" "	"	.9076, 12°.80	
" "	"	.8914, 26°.24	
" "	"	.8730, 41°.13	
" "	"	.8594, 51°.75	
" "	"	.8466, 61°.87	
" "	"	.8309, 73°.74	
" "	"	.9004	W. I. Clark. Ber. 16, 1227.
" "	"	.9012	
" "	"	.8306 } 75°.5	Schiff. G. C. I. 13, 177.
" "	"	.8294 } 75°.5	
" "	"	.92388, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.82673, 77°.1	
" "	"	.9007 } 20°	Winkelmann. P. A. (2), 26, 105.
" "	"	.9047 } 20°	
" "	"	.9253, 0°	Gartenmeister. Bei. 9, 766.
Propyl acetate	$C_3H_7.C_2H_3O_2$	.910, 0°	Pierre and Puchot. Z. C. 12, 660.
" "	"	.8635, 42°.5	
" "	"	.8137, 84°.6	
" "	"	.910, 0°	Pierre and Puchot. Ann. (4), 22, 289.
" "	"	.8627, 42°.5	
" "	"	.8128, 84°.6	

Name.	Formula.	Sp. Gravity.	Authority.
Propyl acetate	$C_3H_7.C_2H_3O_2$	.913, 0°	Rossi. A. C. P. 159, 79.
" "	"	.8992, 15°	Linnemann. A. C. P. 161, 30.
" "	"	.8856, 20°	Brühl. Ber. 13, 1530.
" "	"	.8871, 14°	De Heen. Bei. 5, 105.
" "	"	.7916 } 101°.8	Schiff. G. C. I. 13, 177.
" "	"	.7918 } 101°.8	
" "	"	.909092, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.794388, 100°.8	
" "	"	.9093, 0°	Gartenmeister. A. C. P. 233, 249.
Butyl acetate	$C_4H_9.C_2H_3O_2$	.9000, 0°	Lieben and Rossi. A. C. P. 158, 137.
" "	"	.8817, 20°	
" "	"	.8659, 40°	
" "	"	.8768, 23°	Linnemann. Ann. (4), 27, 268.
" "	"	.9016, 0°	Gartenmeister. A. C. P. 233, 249.
" "	"	.7683, 124°.5	
Isobutyl acetate	"	.8845, 16°	Wurtz. J. 7, 575.
" "	"	.892, 0°	Lieben. J. 21, 443.
" "	"	.89096, 0°	Chapman and Smith. J. C. S. 22, 160.
" "	"	.8747, 16°	
" "	"	.83143, 50°	
" "	"	.9052, 0°	Pierre and Puchot. Ann. (4), 22, 322.
" "	"	.8668, 37°.1	
" "	"	.8328, 68°.9	
" "	"	.8096, 89°.4	
" "	"	.7972, 99°.75	
" "	"	.7589, 112°.7	Schiff. G. C. I. 13, 177.
" "	"	.892100, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.77080, 116°.3	
Normal amyl acetate	$C_5H_{11}.C_2H_3O_2$	.8963, 0°	Lieben and Rossi. A. C. P. 159, 70.
" " "	"	.8792, 20°	
" " "	"	.8645, 40°	
" " "	"	.8948, 0°	Gartenmeister. A. C. P. 233, 249.
" " "	"	.7461, 147°.6	
Methylpropylcarbyl acetate.	"	.9222, 0°	Wurtz. Z. C. 11, 490.
Diethylcarbyl acetate	"	.909, 0°	Wagner and Saytzeff. A. C. P. 175, 366.
" "	"	.893, 16°	
Amyl acetate	"	.8572, 21°	Kopp. A. C. P. 94, 297.
" "	"	.8765, 0°	
" "	"	.8837, 0°	Kopp. A. C. P. 94, 257.
" "	"	.8692, 15°.1	
" "	"	.863, 10°	Delffs. J. 7, 26.
" "	"	.8762, 15°	Mendelejeff. J. 13, 7.
" "	"	.8733 } 15°	Schorlemmer. J. 19, 527.
" "	"	.8752 } 15°	
" " Inactive	"	.8838, 0°	Balbiano. Ber. 9, 1437.
" "	"	.8561, 14°	De Heen. Bei. 5, 105
" "	"	.8561, 20°	Brühl. Bei. 4, 782.
" "	"	.7429 } 138°.5	Schiff. G. C. I. 13, 177.
" "	"	.7430 } 138°.5	

Name.	Formula.	Sp. Gravity.	Authority.
Tertiary amyl acetate	$C_5 H_{11}. C_2 H_3 O_2$	.8909, 0°	Flawitzky. A. C. P. 179, 349.
" " "	"	.8738, 19°	
Normal hexyl acetate	$C_6 H_{13}. C_2 H_3 O_2$	.8890, 17°	Franchimont and Zincke. C. N. 24, 263.
" " "	"	.8902, 0°	Gartenmeister. A. C. P. 233, 249.
" " "	"	.7267, 169°.2	
Secondary hexyl acetate	"	.8778, 0°	Wanklyn and Erlenmeyer. J. 16, 522.
" " "	"	.8310, 50°	
Methyldiethylcarbyl acetate.	"	.8824, 20°	Reformatsky. J. P. C. (2), 36, 340.
" "	"	.8772, 25°	
" "	"	.8735, 30°	
" "	"	.8679, 35°	
Ethylpropylcarbyl acetate.	"	.8525, 0°	Buff. J. 21, 336.
Methylisobutylcarbyl acetate.	"	.8805, 0°	Kuwschinow. Ber. 20, ref. 629.
Methylpropylethol acetate.	"	.8717, 25°	Lieben and Zeisel. M. C. 4, 33.
Normal heptyl acetate	$C_7 H_{15}. C_2 H_3 O_2$	.874, 16°	Cross. J. C. S. 32, 123.
" " "	"	.8891, 0°	Gartenmeister. A. C. P. 233, 249.
" " "	"	.7134, 191.°8	
Isoheptyl acetate	"	.8605, 16°	Three products. Schorlemmer. A. C. P. 136, 271.
" "	"	.8707, 16°.5	
" "	"	.8868, 19°	
Dipropylcarbyl acetate	"	.8742, 0°	Ustinoff and Saytzeff. J. P. C. (2), 34, 470.
" "	"	.8587, 20°	
Methylisoamylcarbyl acetate.	"	.8595, 23°	Rohn. A. C. P. 190, 312.
Normal octyl acetate	$C_8 H_{17}. C_2 H_3 O_2$	.8717, 16°	Zincke. J. 22, 370.
" " "	"	.8847, 0°	Gartenmeister. A. C. P. 233, 249.
" " "	"	.6981, 210°	
Methyldipropylcarbyl acetate.	"	.8738, 0°	Gortaloff and Saytzeff. J. P. C. (2), 33, 702.
" "	"	.8554, 20°	
"Octylene acetate"	"	.822, 0°	Clermont. J. 17, 517.
" "	"	.803, 26°	
Ethyldipropylcarbyl acetate.	$C_9 H_{19}. C_2 H_3 O_2$	.8795, 0°	Tschebotareff and Saytzeff. J. P. C. (2), 33, 193.
" "	"	.8675, 20°	
Isomer of myristic acetate	$C_{16} H_{32} O_2$	.8559, 15°	Perkin, Jr. J. C. S. 43, 77.
" " "	"	.8476, 30°	
" " "	"	.8448, 35°	
Cetyl acetate	$C_{16} H_{33}. C_2 H_3 O_2$	.858, 20°	Dollfus. J. 17, 518.
Methyl propionate	$C H_3. C_3 H_5 O_2$	.9578, 4°	Kahlbaum. Ber. 12, 344.
" "	"	.8954, 14°	De Heen. Bei. 5, 105.
" "	"	.8422, 78°.5	Schiff. G. C. I. 13, 177.
" "	"	.8423, 78°.5	
" "	"	.93725, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.836798, 79°.9	
" "	"	.922, 15°	Israel. A. C. P. 231, 197.
" "	"	.9403, 0°	Gartenmeister. Bei. 9, 766.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl propionate	$C_2H_5.C_3H_5O_2$	.9231, 0°	Kopp. A. C. P. 95, 307.
" "	"	.8949, 26°.3	
" "	"	.9139, 0°	Pierre and Puchot. Ann. (4), 22, 351.
" "	"	.8625. 45°.1	
" "	"	.816, 88°	
" "	"	.8964, 16°	Linnemann. A.C.P. 160, 195.
" "	"	.8945, 17°	
" "	"	.9175, 14°	De Heen. Bei. 5, 105.
" "	"	.7961 98°.8	Schiff. G. C. I. 13, 177.
" "	"	.7963 98°.8	
" "	"	.9109, 0°	Several intermediate values given. Naccari and Pagliani. Bei. 6, 89.
" "	"	.8968, 12°.60	
" "	"	.8832, 24°.57	
" "	"	.8637, 41°.54	
" "	"	.8514, 52°.05	
" "	"	.8365, 64°.46	
" "	"	.8247, 74°.46	
" "	"	.8020, 92°.96	
" "	"	.91238, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.79868, 98°.3	
" "	"	.91224, 0°	Weger. Ber. 16, 2912.
" "	"	.886 15°	Three samples. Israel. A. C. P. 231, 197.
" "	"	.8910 15°	
" "	"	.8900, 19°	
Propyl propionate	$C_3H_7.C_3H_5O_2$	.9022, 0°	Pierre and Puchot. Ann. (4), 22, 293.
" "	"	.8498, 51°.27	
" "	"	.7944, 100°.6	
" "	"	.7839, 108°.34	
" "	"	.8885, 13°	Linnemann. A. C. P. 161, 32.
" "	"	.8821, 14°	De Heen. Bei. 5, 105.
" "	"	.7680 121°	Schiff. G. C. I. 13, 177.
" "	"	.7688 121°	
" "	"	.90192, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.772008, 122°.2	
" "	"	.9023, 0°	Gartenmeister. A. C. P. 233, 249.
Butyl propionate	$C_4H_9.C_3H_5O_2$	.8828, 15°	Linnemann. Ann. (4), 27, 268.
" "	"	.8953, 0°	Gartenmeister. A. C. P. 233, 249.
" "	"	.7489, 145°.4	
Isobutyl propionate	"	.8926, 0°	Pierre and Puchot. Ann. (4), 22, 324.
" "	"	.8437, 49°.2	
" "	"	.7896, 100°.15	
" "	"	.7698, 116°.5	
" "	"	.887595, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.74424, 136°.8	
Amyl propionate	$C_5H_{11}.C_3H_5O_2$	.8700, 14°	De Heen. Bei. 5, 105.
" "	"	.7295, 160°	Schiff. G. C. I. 13, 177.
" "	"	.887672, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.73646, 160°.2	
Normal heptyl propionate	$C_7H_{15}.C_3H_5O_2$	.8846, 0°	Gartenmeister. A. C. P. 233, 249.
" " "	"	.6946, 208°	
Normal octyl propionate	$C_8H_{17}.C_3H_5O_2$	.8833, 0°	" "
" " "	"	.6860, 226°.4	
Methyl butyrate	$CH_3.C_4H_7O_2$	.92098, 0°	Kopp. P. A. 72, 280.
" "	"	.9045, 15°.5	

Name.	Formula.	Sp. Gravity.	Authority.
Methyl butyrate	$CH_3.C_4H_7O_2$	1.02928, 0°	Pierre. C. R. 27, 213.
" "	"	.9091, 0°	Kopp. A. C. P. 95, 307.
" "	"	.8793, 30°.3	
" "	"	.9475, 4°	Kahlbaum. Ber. 12, 344.
" "	"	.8962, 20°	Brühl. Ber. 13. 1530
" "	"	.91939, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.80261, 102°.3	
" "	"	.9194, 0°	Gartenmeister. A. C. P. 233, 249.
Methyl isobutyrate	"	.9056, 0°	Pierre and Puchot. B. S. C. 19, 72.
" "	"	.8625, 38°.65	
" "	"	.815, 78°.6	
" "	"	.911181, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.80397, 92°.3	
Ethyl butyrate	$C_2H_5.C_4H_7O_2$	.9003, 18°	Linnemann. A. C. P. 160, 195.
" "	"	.8990, 17°	
" "	"	.8892, 20°	Brühl. Ber. 14, 2800.
" "	"	.7703 } 119°.8	Schiff. G. C. I. 13, 177.
" "	"	.7705 } 119°.8	
" "	"	.90193, 0°	Pierre. C. R. 27, 213.
" "	"	.8894, 15°	Mendelejeff. J. 13, 7.
" "	"	.8942, 0°	Frankland and Duppa. J. 18, 306.
" "	"	.89957, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.76940, 119°.9	
" "	"	.9004, 0°	Gartenmeister. A. C. P. 233, 249.
Ethyl isobutyrate	"	.90412, 0°	Kopp. P. A. 72, 287.
" "	"	.89065, 13°	
" "	"	.890, 0°	Pierre and Puchot. B. S. C. 19, 72.
" "	"	.871, 18°.8	
" "	"	.831, 55°.6	
" "	"	.7794, 100°.1	
" "	"	.7681, 110°.1	Schiff. G. C. I. 13, 177.
" "	"	.890367, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.77725, 110°.1	
Propyl butyrate	$C_3H_7.C_4H_7O_2$	.8789, 15°	Linnemann. A.C.P. 161, 33.
" "	"	.89299, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.745694, 142°.7	
Propyl isobutyrate	"	.8872, 0°	Pierre and Puchot. Ann. (4), 22, 295.
" "	"	.8402, 47°.24	
" "	"	.7842, 100°.25	
" "	"	.7525, 128°.75	
" "	"	.884317, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.74647, 133°.9	
Isopropyl butyrate	"	.8787, 0°	Silva. Z. C. 12, 508.
" "	"	.8652, 13°	
Butyl butyrate	$C_4H_9.C_4H_7O_2$	.8885, 0°	Lieben and Rossi. A. C. P. 158, 137.
" "	"	.8717, 20°	
" "	"	.8579, 40°	
" "	"	.8760, 12°	Linnemann. Ann. (4), 27, 268.
" "	"	.8878, 0°	Gartenmeister. A.C. P. 233, 249.
" "	"	.7264, 165°.7	

Name.	Formula.	Sp. Gravity.	Authority.
Isobutyl butyrate	$C_4H_9.C_4H_7O_2$	.881778, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.71630, 156°.9	
" "	"	.8798, 0°	Grunzweig. B. S. C. 18, 125.
" "	"	.86635, 16°	
" "	"	.81838, 98°.4	
Isobutyl isobutyrate	"	.8719, 0°	Pierre and Puchot. Ann. (4), 22, 326.
" "	"	.8238, 50°.8	
" "	"	.7753, 99°.8	
" "	"	.7439, 128°.3	
" "	"	.874957, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.73281, 146°.6	
" "	"	.87519, 0°	Grunzweig. B. S. C. 18, 125.
" "	"	.86064, 15°	
" "	"	.81192, 98°.4	
Normal amyl butyrate	$C_5H_{11}.C_4H_7O_2$	.8832, 0°	Gartenmeister. A. C. P. 233, 249.
" " "	"	.7092, 184°.8	
Amyl butyrate	"	.8683, 15°	Mendelejeff. J. 13, 7.
" "	"	.852, 15°	Delffs. J. 7, 26.
" "	"	.882306, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.71148, 178°.6	
" "	"	.873, 10°	De Heen. Bei. 10, 313.
Amyl isobutyrate	"	.8769, 0°	Pierre and Puchot. Ann. (4), 22, 343.
" "	"	.8264, 55°.4	
" "	"	.7839, 100°.2	
" "	"	.7446, 139°.5	
" "	"	.875965, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.70662, 168°.8	
Normal hexyl butyrate	$C_6H_{13}.C_4H_7O_2$	.8825, 0°	Gartenmeister. A. C. P. 233, 249.
" " "	"	.6963, 205°.1	
Normal heptyl butyrate	$C_7H_{15}.C_4H_7O_2$	.8827, 0°	" "
" " "	"	.6869, 225°.2	
Normal octyl butyrate	$C_8H_{17}.C_4H_7O_2$	.8794, 0°	" "
" " "	"	.6751, 242°.2	
Cetyl butyrate	$C_{16}H_{33}.C_4H_7O_2$	.856, 20°	Dollfus. J. 17, 518.
Methyl valerate	$CH_3.C_5H_9O_2$	.895, 17°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.9097, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7767, 127°.3	
Methyl isovalerate	"	.8960, 0°	Kopp. A. C. P. 96.
" "	"	.8806, 16°	
" "	"	.901525, 0°	Kopp. P. A. 72, 291.
" "	"	.88687, 15°	
" "	"	.88662, 15°.3	
" "	"	.9005, 0°	Pierre and Puchot. Ann. (4), 22, 349.
" "	"	.8581, 41°.5	
" "	"	.8343, 64°.3	
" "	"	.7945, 100°.1	
" "	"	.8908, 16°	Renard. Ann. (6), 1, 223.
" "	"	.885465, 17°	Schmidt and Sachtleben. J. C. S. 36, 139.
" "	"	.8795, 20°	Brühl. Bei. 4, 782.
" "	"	.90065, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.77518, 116°.7	
Ethyl valerate	$C_2H_5.C_5H_9O_2$	.894, 0°	Lieben and Rossi. A. C. P. 165, 109.
" "	"	.8765, 20°	
" "	"	.8616, 40°	

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl valerate	$C_2H_5.C_5H_9O_2$	.878, 18°.5	Cahours and Demarçay. C. R. 89, 331.
" "	"	.8939, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7443, 144°.7	
Ethyl isovalerate	"	.894, 13°	Otto. A. C. P. 25, 62.
" "	"	.869, 14°	Berthelot. J. 7, 441.
" "	"	.8829, 0°	Kopp. A. C. P. 96.
" "	"	.8659, 18°	
" "	"	.886, 0°	Pierre and Puchot. Ann. (4), 22, 353.
" "	"	.832, 55°.7	
" "	"	.7843, 99°.63	
" "	"	.7582, 122°.5	
" "	"	.8661, 20°	Brühl. Bei. 4, 782.
" "	"	.88514, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.74764, 134°.3	
" "	"	.8743, 16°	Renard. Ann. (6), 1, 223.
" "	"	.8882, 0°	Frankland and Duppa. J. 20, 396.
" "	"	.87166, 18°	
Ethyl trimethylacetate	"	.8773, 0°	Friedel and Silva. J. C. S. (2), 11, 1127.
" "	"	.8535, 25°	
" "	"	.875, 0°	Butlerow. B. S. C. 23, 27.
Ethyl methylethylacetate	"	.877, 15°	Israel. A. C. P. 231, 197.
Propyl valerate	$C_3H_7.C_5H_9O_2$	.8888, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7264, 167.°5	
Propyl isovalerate	"	.8862, 0°	Pierre and Puchot. Ann. (4), 22, 297.
" "	"	.8387, 50°.8	
" "	"	.7906, 100°.15	
" "	"	.7755, 113°.7	
" "	"	.880915, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.727405, 155°.9	
Isopropyl isovalerate	"	.8702, 0°	Silva. Z. C. 12, 508.
" "	"	.8538, 17°	
Butyl valerate	$C_4H_9.C_5H_9O_2$	.8847, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7095, 185°.8	
Isobutyl isovalerate	"	.8884, 0°	Pierre and Puchot. Ann. (4), 22, 330.
" "	"	.8438, 49°.7	
" "	"	.7966, 100°	
" "	"	.7428, 155°.8	
" "	"	.873599, 0°	Elsässer. A. C. P. 218, 302.
" "	"	.70549, 168°.7	
Normal amyl valerate	$C_5H_{11}.C_5H_9O_2$	.8812, 0°	Gartenmeister. Bei. 9, 766.
" " "	"	.6982, 203°.7	
Amyl isovalerate	"	.8793, 0°	Kopp. A. C. P. 94, 257.
" "	"	.8645, 17°.7	
" "	"	.8596, 15°	Mendelejeff. J. 13, 7.
" "	"	.874, 0°	Pierre and Puchot. Ann. (4), 22, 346.
" "	"	.832, 50°.67	
" "	"	.787, 100°	
" "	"	.740, 149°.5	
" " Inactive	"	.8700, 0°	Balbiano. Ber. 9, 1437.
" "	"	.8633, 16°	Renard. Ann. (6), 1, 223.
" "	"	.869, 15°	Ley. Ber. 6, 1362.

Name.	Formula.	Sp. Gravity.	Authority.
Amyl isovalerate	$C_5H_{11}.C_5H_9O_2$	.8658, 20°	Brühl. Bei. 4, 782.
" "	"	.863, 10°	De Heen. Bei. 11, 313.
Normal hexyl valerate	$C_6H_{13}.C_5H_9O_2$	.8797, 0°	Gartenmeister. Bei. 9, 766.
" " "	"	.6823, 223°.8	
Normal heptyl valerate	$C_7H_{15}.C_5H_9O_2$	.8786, 0°	" "
" " "	"	.6708, 243°.6	
Normal octyl valerate	$C_8H_{17}.C_5H_9O_2$	.8784, 0°	" "
" " "	"	.6618, 260°.2	
Octyl isovalerate	"	.8624, 16°	Zincke. J. 22, 371.
Cetyl isovalerate	$C_{16}H_{33}.C_5H_9O_2$	.852, 20°	Dollfus. J. 17, 518.
Methyl caproate	$CH_3.C_6H_{11}O_2$	.8977, 18°	Fehling. A. C. P. 53, 399.
" "	"	.889, 19°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.9039, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7536, 149°.6	
Ethyl caproate	$C_2H_5.C_6H_{11}O_2$	.882, 18°	Lerch. A. C. P. 49, 212.
" "	"	.8765, 17°.5	Franchimont and Zincke. A. C. P. 163, 193.
" "	"	.8898, 0°	Lieben and Rossi. A. C. P. 165, 118.
" "	"	.8732, 20°	
" "	"	.8594, 40°	
" "	"	.8898, 0°	Lieben. A. C. P. 170, 89.
" "	"	.8728, 20°	
" "	"	.8596, 40°	
" "	"	.878, 19°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.8888, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7269, 166°.6	
Ethyl isocaproate	"	.887, 0°	Lieben and Rossi. A. C. P. 165, 118.
" "	"	.8705, 20°	
" "	"	.8566, 40°	
Ethyl diethylacetate	"	.8822, 0°	Frankland and Duppa. J. 18, 308.
" "	"	.8826, 0°	Saytzeff. Ber. 11, 512.
" "	"	.8686, 18°	
Ethylmethylpropylacetate	"	.8816, 0°	" "
" "	"	.8670, 18°	
" "	"	.8841, 0°	Lieben and Zeisel. M. C. 4, 26.
Propyl caproate	$C_3H_7.C_6H_{11}O_2$	.8844, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7097, 185°.5	
Butyl caproate	$C_4H_9.C_6H_{11}O_2$	.8824, 0°	" "
" "	"	.6978, 204°.3	
Hexyl caproate	$C_6H_{13}.C_6H_{11}O_2$	.865	Franchimont and Zincke. C. N. 24, 263.
Methylethylpropyl methylethylpropionate.	"	.867, 15°	Romburgh. J. C. S. 52, 228.
Normal heptyl caproate	$C_7H_{15}.C_6H_{11}O_2$	.8769, 0°	Gartenmeister. Bei. 9, 766.
" " "	"	.6594, 259.°4	
Normal octyl caproate	$C_8H_{17}.C_6H_{11}O_2$	.8748, 0°	" "
" " "	"	.6509, 275°.2	
Methyl oenanthate	$CH_3.C_7H_{13}O_2$	.889, 19°	Cahours and Demarçay. C. R. 89, 331.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl oenanthate	$CH_3.C_7H_{13}O_2$	.8981, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7325, 172.°1	
Methyl isoöenanthate	"	.8840, 15°	Poetsch. A. C. P. 218, 56.
" "	"	.8790, 15°	Hecht. A. C. P. 209, 324.
Ethyl oenanthate	$C_2H_5.C_7H_{13}O_2$	.874, 24°	Franchimont. A. C. P. 165, 237.
" "	"	.8735, 16°	Grimshaw and Schorlemmer. A. C. P. 170, 137.
" "	"	.871, 21°	Mehlis. A. C. P. 185, 366.
" "	"	.877, 16°.5	Cahours and Demarçay. C. R. 89, 331.
" "	"	.8879, 0°	Lieben and Janecek. J. R. C. 5, 156.
" "	"	.8716, 20°	
" "	"	.8589, 40°	
" "	"	.87163 } 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.87199 } 15°	
" "	"	.86477 } 25°	
" "	"	.86487 } 25°	
" "	"	.8861, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.7105, 187°.1	
Ethyl isoöenanthate	"	.8720, 15°	Poetsch. A. C. P. 218, 56.
" "	"	.8685, 15°	Hecht. A. C. P. 209, 324.
" "	"	.8570, 27°	
Propyl oenanthate	$C_3H_7.C_7H_{13}O_2$	.8824, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.6965, 206°.4	
Propyl isoöenanthate	"	.8635, 19°	Hecht. A. C. P. 209, 324.
Isopropyl isoöenanthate	"	.859, 19°	Hecht. A. C. P. 209, 325.
Butyl oenanthate	$C_4H_9.C_7H_{13}O_2$	.8807, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.6839, 225°.1	
Normal heptyl oenanthate	$C_7H_{15}.C_7H_{13}O_2$	.870, 16°	Cross. J. C. S. 32, 123.
" " "	"	.86522, 15°	Perkin. J. P. C. (2), 32, 523.
" " "	"	.85933, 25°	
" " "	"	.8807, 0°	Gartenmeister. Bei. 9, 766.
" " "	"	.6839, 225°.1	
Normal octyl oenanthate	$C_8H_{17}.C_7H_{13}O_2$	.8757, 0°	" "
" " "	"	.6419, 290°.4	
Methyl caprylate	$CH_3.C_8H_{15}O_2$	.882	Fehling. A. C. P. 53, 399.
" "	"	.887, 18°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.8942, 0°	Gartenmeister. Bei. 9, 776.
" "	"	.7163, 192°.9	
Ethyl caprylate	$C_2H_5.C_8H_{15}O_2$	.8738, 15°	Fehling. A. C. P. 53, 399.
" "	"	.8728, 16°	Zincke. J. 22, 373.
" "	"	.878, 17°	Cahours and Demarçay. C. R. 89, 331.
" "	"	.8842, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.6980, 205°.8	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Propyl caprylate	$C_3 H_7 . C_8 H_{15} O_2$	.8805, 0°	Gartenmeister. Bei. 9, 766.
" "	"	.6867, 224°.7	
Butyl caprylate	$C_4 H_9 . C_8 H_{15} O_2$	.8797, 0°	" "
" "	"	.6745, 240°.5	
Normal heptyl caprylate	$C_7 H_{15} . C_8 H_{15} O_2$	.8754, 0°	" "
" " "	"	.6405, 289°.8	
Normal octyl caprylate	$C_8 H_{17} . C_8 H_{15} O_2$	.8625, 16°	Zincke. J. 22, 371.
" " "	"	.8755, 0°	Gartenmeister. Bei. 9, 766.
" " "	"	.6318, 305°.9	
Methyl pelargonate	$C H_3 . C_9 H_{17} O_2$	.8765, 17°.5	Zincke and Franchimont. A.C.P. 164, 333.
Ethyl pelargonate	$C_2 H_5 . C_9 H_{17} O_2$	.86	Cahours. J. 3, 401.
" "	"	.8725, 15°.5	Delffs. J. 7, 26.
" "	"	.8655, 17°.5	Zincke and Franchimont. A.C.P. 164, 333.
" "	"	.86307	With acid from six sources. Bergmann. Arch. Pharm. 22, 331.
" "	"	.86231	
" "	"	.86503	
" "	"	.86402	
" "	"	.86376	
" "	"	.86209	
" "	"	.87033, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.86407, 25°	
Ethyl isononylate	"	.86406, 17°	Kullhem. A. C. P. 173, 319.
Ethyl rutylate	$C_2 H_5 . C_{10} H_{19} O_2$	.862	Rowney. J. 4, 443.
Ethyl laurate	$C_2 H_5 . C_{12} H_{23} O_2$	.86, 20°	Görgey. J. 1, 561.
" "	"	.8671, 19°	Delffs. J. 7, 26.
Ethyl myristate	$C_2 H_5 . C_{14} H_{27} O_2$	.864	Playfair. A.C.P. 37, 153.

6th. Aldehydes of the Acetic Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acetic aldehyde. B. 20°.8	$C_2 H_4 O$	.7900, 18°	Liebig. A. C. P. 14, 132.
" "	"	.79442, 5°.1	Kopp. P. A. 72, 235.
" "	"	.79388, 5°.6	
" "	"	.80092, 0°	
" "	"	.80551, 0°	Pierre. C. R. 27, 213.
" "	"	.796, 15°	Guckelberger. J. 1, 848.
" "	"	.8217, 5°—10°	Regnault. P. A. 62, 50.
" "	"	.8173, 10°—15°	
" "	"	.8130, 15°—20°	
" "	"	.7771, 21°	Ramsay. J. C. S. 35, 463.
" "	"	.807, 0°	Wurtz.
" "	"	.7932, 10°	Landolt.
" "	"	.7799, 20°	Brühl. Bei. 4, 782.

Name.	Formula.	Sp. Gravity.	Authority.
Acetic aldehyde	C_2H_4O	.79509, 10°	Perkin. J. P. C. (2), 32, 523.
" "	"	.79138, 13°	
" "	"	.78761, 16°	
" "	"	.81812, —5°	Perkin. J. C. S. 51, 808.
" "	"	.80561, 0°	
" "	"	.80058, 4°	
" "	"	.79520, 8°	
" "	"	.78826, 13°	
Paraldehyde. B. 124°	$(C_2H_4O)_3$	.998, 15°	Kekulé and Zincke. Z. C. 13, 560.
"	"	.9943 20°	Two lots. Brühl. A. C. P. 203, 1.
"	"	.9971 20°	
"	"	.8737 124°.3	Schiff. G. C. I. 13, 177.
"	"	.8739 124°.3	
"	"	.9909, 19°	Gladstone. Bei. 9, 249.
"	"	.9982	Louguinine. Ber. 19, ref. 2.
"	"	.99925, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	.99003, 25°	
Isomer of aldehyde. B. 110°	$(C_2H_4O)_n$	1.033, 0°	Bauer. J. 13, 436.
Propionic aldehyde. B. 49°.5.	C_3H_6O	.790, 15°	Guckelberger. J. 1, 848.
" "	"	.8284, 0°	Michaelson. J. 17, 336.
" "	"	.804, 17°	Rossi. A. C. P. 159, 79.
" "	"	.832, 0°	Pierre and Puchot. Ann. (4), 22, 298.
" "	"	.8192, 9°.7	
" "	"	.7898, 32°.6	
" "	"	.8074, 21°	Linnemann. A. C. P. 161, 28.
" "	"	.8066, 20°	Brühl. Ber. 13, 1527.
" "	"	.80648, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.79664, 25°	
Butyric aldehyde. B. 75°	C_4H_8O	.821, 22°	Chancel. C. R. 19, 1440.
" "	"	.8341, 0°	Michaelson. J. 17, 336.
" "	"	.8170, 20°	Brühl. A. C. P. 203, 1.
" "	"	.80, 15°	Guckelberger. J. 1, 849.
Isobutyric aldehyde. B. 63°	"	.8226, 0°	Pierre and Puchot. Z. C. 13, 255.
" "	"	.7919, 27°.75	
" "	"	.7638, 50°.4	
" "	"	.7950, 20°	Urech. Ber. 12, 1744.
" "	"	.803, 20°	Linnemann. Ann. (4), 27, 268.
" "	"	.7938, 20°	Brühl. A. C. P. 203, 1.
" "	"	.8057, 0°	Fossek. M. C. 4, 662.
" "	"	.7898, 20°	
" "	"	.79722, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.78787, 26°	
Polymer of isobutyric aldehyde.	$(C_4H_8O)_x$	.969, 24°	Urech. Ber. 12, 1744.
Isovaleric aldehyde. B. 92°.5.	$C_5H_{10}O$	.818	Trautwein.

Name.	Formula.	Sp. Gravity.	Authority.
Isovaleric aldehyde	$C_5 H_{10} O$	.820, 22°	Chancel. J. P. C. 36, 447.
" "	"	.8009, 20°	Personne. J. 7, 654.
" "	"	.8224, 0°	Kopp. A. C. P. 94, 257.
" "	"	.8057, 17°.4	
" "	"	.8209, 0°	Pierre and Puchot. Ann. (4), 22, 340.
" "	"	.778, 43°.4	
" "	"	.7485, 71°.9	
" "	"	.768, 12°.5	A. Schröder. Z. C. 14, 510.
" "	"	.7984, 20°	Brühl. Bei. 4, 782.
" "	"	.8061, 25°	Gladstone. Bei. 9, 249.
" "	"	.7998, 20°	Landolt. P. A. 122, 556.
" "	"	.80405, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.79607, 25°	
Polymer of valeral. B. 215°	$(C_5 H_{10} O)_n$	.90	Wanklyn. J. 22, 530.
Isomer of capraldehyde. B. 180°—185°.	$C_6 H_{12} O$	.842, 15°	Fittig. J. 13, 319.
Oenanthic aldehyde, or oenanthol. B. 154°.	$C_7 H_{14} O$	.8271, 7°	Bussy. J. P. C. 37, 92.
" "	"	.827, 17°	Williamson. J. 1, 565.
" "	"	.823, 16°	Cross. J. C. S. 32, 123.
" "	"	.8495, 20°	Brühl. A. C. P. 203, 1.
" "	"	.8231, 15°	Perkin, Jr. Ber. 15, 2802.
" "	"	.8128, 30°	
" "	"	.8099, 35°	
" "	"	.82264, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.81578, 25°	
Isomer of oenanthol. B. 161°—164°.	"	.835, 14°	Fittig. J. 13, 319.
Caprylic aldehyde. B. 178°	$C_8 H_{16} O$	.818, 19°	Bouis. J. 8, 524.
" "	"	.820	Limpricht. A. C. P. 93, 242.
Euodyl aldehyde. B. 213	$C_{11} H_{22} O$	.8497, 15°	Williams. J. 11, 443.
Isomer of myristic aldehyde.	$C_{14} H_{28} O$	.8274, 30°	Perkin, Jr. J. C. S. 43, 71.
" "	"	.8258, 35°	
Derivative of the foregoing compound.	$C_{21} H_{40} O$	.8744, 15°	Perkin, Jr. J. C. S. 43, 72.
"	"	.8665, 30°	
" " "	"	.8637, 35°	

7th. Ketones of the Paraffin Series.

Name.	Formula.	Sp. Gravity.	Authority.
Dimethyl ketone, or acetone. B. 56°.5.	$CH_3.CO.CH_3$	.7921, 18°	Liebig. Gm. H.
" " "	"	.8144, 0°	Kopp. P. A. 72, 239.
" " "	"	.79045, 13°.9	
" " "	"	.790, 15°	Linnemann. A. C. P. 143, 349.
" " "	"	.8008, 15°	Mendelejeff. J. 13,7.
" " "	"	.7938, 18°	Linnemann. A. C. P. 161, 18.
" " "	"	.7975, 15°	
" " "	"	.7998, 15°	Grodzki and Krämer. Z. A. C. 14, 103.
" " "	"	.81858, 0°	Thorpe. J. C. S. 37, 371.
" " "	"	.75369, 56°.53	
" " "	"	.7920, 20°	Brühl. Ber. 13, 1527.
" " "	"	.8125, 0°	Zander. A. C. P. 214, 181.
" " "	"	.7489, 56°.3	
" " "	"	.7506, 56°	Schiff. G. C. I. 13, 177.
" " "	"	.79652, 15°	Perkin. J. P. C. (2), 32, 523.
" " "	"	.78669, 25°	
Methyl ethyl ketone, or methyl acetone. B. 78°.	$CH_3.CO.C_2H_5$	.838, 19°	Fittig. J. 12, 341.
" " "	"	.8125, 13°	Frankland and Duppa. J. 18, 309.
" " "	"	.824, 0°	Popoff. J. 20, 399.
" " "	"	.8063, 15°.3	Grimm. Z. C. 14, 174.
" " "	"	.8045, 19°.8	Schramm. Ber. 16, 1581.
Diethyl ketone, or propione. B. 104°.	$C_2H_5.CO.C_2H_5$	.811, 11°.5	Genther. J. 20, 455.
" " "	"	.8145, 0°	Chapman and Smith. J. 20, 453.
" " "	"	.8015, 15°	
" " "	"	.813, 20°	Smith. B. S. C. 18, 321.
" " "	"	.829, 0°	Wagner and Saytzeff. A. C. P. 179, 323.
" " "	"	.811, 19°	
" " "	"	.8335, 0°	Chancel. C. R. 99, 1055.
Methyl propyl ketone. B. 103°.	$CH_3.CO.C_3H_7$	.8078, 18°.5	Grimm. Z. C. 14, 174.
" " "	"	.827, 0°	Friedel. J. 11, 295.
" " "	"	.842, 19°	Fittig. J. 12, 341.
" " "	"	.8132, 13°	Frankland and Duppa. J. 18, 307.
" " "	"	.8040, 22°	
" " "	"	.815, 17°.5	Popoff. A. C. P. 161, 285.
" " "	"	.828, 0°	Wagner and Saytzeff. A. C. P. 179, 323.
" " "	"	.810, 19°	
" " "	"	.8264, 0°	Chancel. C. R. 99, 1055.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl propyl ketone	$CH_3.CO.C_3H_7$	.81238 } 15°	Perkin. J. P. C. (2), 32, 523.
" " "	"	.81283 } 15°	
" " "	"	.80447 } 25°	
" " "	"	.80423 } 25°	
Methyl isopropyl ketone. B. 95°.	"	.8099, 13°	Frankland and Duppa. J. 18, 309.
" " "	"	.815, 15°	Münch. A. C. P. 180, 337.
" " "	"	.822, 0°	Wischnegradsky. A. C. P. 190, 341.
" " "	"	.804, 19°	
" " "	"	.8123, 0°	Winogradow. A. C. P. 191, 125.
" " "	"	.8051, 19°	
Ketone from amylene bromide. B. 76°—81°.	$C_5H_{10}O$	.832, 0°	Bouchardat. Ber. 14, 2261.
Ethyl propyl ketone. B. 123°.	$C_2H_5.CO.C_3H_7$	.818, 17°.5	Popoff. A. C. P. 161, 285.
" " "	"	.833, 21°.8	Oechsner de Coninck. C. R. 82, 93.
Methyl butyl ketone.	$CH_3.CO.C_4H_9$	.8298, 0°	Wanklyn and Erlenmeyer. J. 16, 522.
" " " B. 128°	"	.7846, 50°	
" " "	"	.833, 0°	Friedel. J. 11, 295.
Methyl isobutyl ketone. B. 114°.	"	.81892, 0°	Frankland and Duppa. J. 20, 395.
Methyl secondary butyl ketone. B. 118°.	"	.811, 0°	G. Wagner. Ber. 18, ref. 180.
" " "	"	.8181, 14°.5	Wislicenus. A. C. P. 219, 308.
Methyl tertiary butyl ketone, or pinacolin. B. 106°.	$CH_3.CO.C(CH_3)_3$	.7999, 16°	Fittig. J. 12, 347.
" " " "	"	.830, 0°	Two preparations. Butlerow. A. C. P. 174, 127.
" " " "	"	.791, 50°	
" " " "	"	.823, 0°	
" " " "	"	.787, 50°	
" " " "	"	.7217, 105°	Schiff. Bei. 9, 559.
Ketone from hexylene. B. 125°.	$C_6H_{12}O$	.8343, 11°	L. Henry. C. R. 97, 260.
Dipropyl ketone, or butyrone. B. 144°.	$C_3H_7.CO.C_3H_7$	.830	Chancel. Ann. (3), 12, 146.
" " "	"	.819, 20°	E. Schmidt. Ber. 5, 597.
" " "	"	.82, 20°	Kurtz. A. C. P. 161, 207.
" " "	"	.83048, 4°	Perkin. J. C. S. 49, 323.
" " "	"	.82165, 15°	
" " "	"	.81452, 25°	
Diisopropyl ketone. B. 125°.	"	.8254, 17°	Münch. A. C. P. 180, 331.
Methyl amyl ketone. B. 155°—156°.	$CH_3.CO.C_5H_{11}$	.813, 20°	E. Schmidt. Ber. 5, 597.
" " " B. 182°.5	" ?	.898, 12°	Geuther. J. P. C. (2), 6, 160.
Methyl isoamyl ketone.	"	.828	Popoff. J. 18, 314.
" " " B. 144	"	.829	
" " "	"	.8747, 17°	Grimshaw. A. C. P. 166, 163.
" " "	"	.8175, 17°.2	Rohn. A. C. P. 190,

Name.	Formula.	Sp. Gravity.	Authority.
Methylisopropyl acetone	$CH_3.CO.C_5H_{11}$	.815, 20°	Romburgh. J. C. S. 52, 232.
Methyldiethylcarbyl ketone, or diethyl acetone. B. 138°.	"	.8171, 22°	Frankland and Duppa. J. 18, 306.
Methyl amyl pinacolin.	"	.842, 0°	Wischnegradsky. A. C. P. 178, 103.
" " B. 132°	"	.825, 21°	
Ethyl butyl pinacolin.	$C_2H_5.CO.C(CH_3)_3$	.881, 0°	" "
" " " B. 126°	"	.810, 21°	
Methyl hexyl ketone.	$CH_3.CO.C_6H_{13}$	.817, 23°	Städeler. J. 10, 361.
" " B. 171°	"	.8185, 20°	Brühl. A. C. P. 203, 1.
" " "	"	.6843 172°.3	Schiff. G. C. I. 13, 177.
" " "	"	.6844	
" " B. 209°	"	.8430, 15°	Poetsch. A.C.P. 218, 56.
" " "	"	.8351, 0°	Béhal. B. S. C. 47, 34.
Methyl butyrone. B. 180°	$C_8H_{16}O$	.827, 16°	Limpricht. J. 11, 296.
Isopropyl isobutyl ketone. B. 160°.	$C_3H_7.CO.C_4H_9$	.865, 14°	Williams. C. N. 39, 41.
Ethyl amyl pinacolin.	$C_2H_5.CO.C_5H_{11}$	.845, 0°	Wischnegradsky. A. C. P. 178, 103.
" " " B. 151°	"	.829, 21°	
Diisobutyl ketone, or valerone. B. 181°.	$C_4H_9.CO.C_4H_9$	.833, 20°	E. Schmidt. Ber. 5, 597.
Methyl octyl ketone. B. 211°.	$CH_3.CO.C_8H_{17}$	.8294, 17°.7	Jourdan. Ber. 13, 434.
" " "	"	.8379, 3°.5	Krafft. Ber. 15, 1687.
" " "	"	.8247, 20°	
Diamyl ketone, or caprone. B. 220°.	$C_5H_{11}.CO.C_5H_{11}$	.822, 20°	E. Schmidt. Ber. 5, 597.
" " "	"	.828, 20°	Limpricht. J. 11, 296.
Methyl nonyl ketone, or methyl caprinol. B. 224°.	$CH_3.CO.C_9H_{19}$	.8295, 17°.5	Gorup-Besanez and Grimm. Z. C. 13, 290.
	"	.8281, 18°.7	
" " "	"	.8268, 20°.5	Giesecke. Z. C. 13, 428.
Dihexyl ketone, or oenanthone. B. 264°.	$C_6H_{13}.CO.C_6H_{13}$	.825, 30°	v. Uslar and Seekamp. J. 11, 299.
" " ?	"	.8870, 15°	Poetsch. A. C. P. 218, 56.
Methyl diheptylcarbyl ketone. B. 302°.	$CH_3.CO.C_{15}H_{31}$	.826, 17°	Jourdan. Ber. 13, 434.
Laurone. M. 69°	$C_{11}H_{23}.CO.C_{11}H_{23}$	.8036, 69°	Krafft. Ber. 15, 1711.
"	"	.8024, 70°.7	
"	"	.7888, 90°.9	
Myristone. M. 76°.3	$C_{13}H_{27}.CO.C_{13}H_{27}$	.8013, 76°.3	" "
"	"	.7986, 80°.8	
"	"	.7922, 90°.9	
Palmitone. M. 82°.8	$C_{15}H_{31}.CO.C_{15}H_{31}$	.7997, 82°.8	" "
"	"	.7947, 90°.9	
Stearone. M. 88°.4	$C_{17}H_{35}.CO.C_{17}H_{35}$	.7979, 88°.4	" "
"	"	.7932, 95°	

8th. Oxides, Alcohols, and Ethers of the Olefines.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethylene oxide	$C_2 H_4 . O$	.8945, 0°	Wurtz. J. 16, 486.
Propylene oxide	$C_3 H_6 . O$	.859, 0°	Oser. J. 13, 448.
Butylene oxide. B. 56°.5.	$C_4 H_8 . O$	.8344, 0°	Eltekow. J. C. S. 44, 566.
Isobutylene oxide. B. 51°.5.	"	.8311, 0°	Eltekow. Ber. 16, 397.
Amylene oxide. B. 95°	$C_5 H_{10} . O$	.824, 0°	Bauer. J. 13, 451.
Trimethylethylene oxide. B. 75°.5.	"	.8293, 0°	Eltekow. Ber. 16, 397.
Methylpropylethylene oxide. B. 110°.	$C_6 H_{12} . O$	.8236, 13°.8	L. Henry. Ann. (5), 29, 553.
δ. Hexylene oxide. B. 103°—104°.	"	.8739, 0°	Lipp. Ber. 18, 3284.
Octylene oxide. B. 145°	$C_8 H_{16} . O$	.831, 15°	De Clermont. Z. C. 13, 411.
Diamylene oxide. B. 185°.	$C_{10} H_{20} . O$	.9402, 0°	Schneider. A. C. P. 157, 221.
Diethylene dioxide. B. 102°.	$C_4 H_8 O_2$	1.0482, 0°	Wurtz. J. 15, 423.
Ethylene ethylidene dioxide. B. 82°.5.	"	1.0002, 0°	Wurtz. J. 14, 656.
Ethylene glycol. B. 197°	$C_2 H_4 . (O H)_2$	1.125, 0°	Wurtz. Ann. (3), 55, 410.
" "	"	.9444, 195°	Ramsay. J. C. S. 35, 463.
" "	"	1.11678, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.11208, 25°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.1072, 20°	Brühl. Bei. 4, 782.
Trimethylene glycol. B. 216°.	$C_3 H_6 . (O H)_2$	1.053, 19°	Reboul. C. R. 79, 169.
" "	"	1.0536, 18°	Freund. J. C. S. 42, 156.
" "	"	1.0625, 0°	Zander. A. C. P. 214, 181.
" "	"	.9028, 214°	Zander. A. C. P. 214, 181.
Propylene glycol. B. 188°	"	1.051, 0°	Wurtz. J. 10, 464.
" "	"	1.038, 23°	Wurtz. J. 10, 464.
" "	"	1.054, 0°	Belohoubek. Ber. 12, 1873.
" "	"	1.047, 19°	Loebisch and Looss. J. C. S. 42, 377.
" "	"	1.0527, 0°	Zander. A. C. P. 214, 181.
" "	"	.8899, 188°.5	Zander. A. C. P. 214, 181.
Butylene glycol. B. 183°.5	$C_4 H_8 . (O H)_2$	1.048, 0°	Wurtz. J. 12, 499.
Dimethylethyleneglycol. B. 207°.5.	"	1.0259, 0°	Wurtz. C. R. 97, 473.
Ethylethylene glycol.	"	1.0189, 0°	Grabowsky and Saytzeff. A. C. P. 179, 383.
" " B. 191°.5	"	1.0059, 17°.5	Grabowsky and Saytzeff. A. C. P. 179, 383.
Isobutylene glycol. B. 177°	"	1.0129, 0°	Nevolé. C. R. 83, 67.
" "	"	1.0003, 20°	Nevolé. C. R. 83, 67.

Name.	Formula.	Sp. Gravity	Authority.
Amylene glycol. B. 177°	$C_5H_{10}.(OH)_2$	.987, 0°	Wurtz. J. 11, 424.
Ethylmethylethylene glycol. B. 187°.5.	"	.9945, 0°	Wagnor and Saytzeff. A. C. P. 179, 309.
	"	.9800, 19°	
Isopropylethylene glycol. B. 206°.	"	.9987, 0°	Flavitsky. A. C. P. 179, 353.
	"	.9843, 21°.5	
Methylpropylethylene glycol. B. 207°.	$C_6H_{12}.(OH)_2$	.9669, 0°	Wurtz. J. 17, 516.
Dimethylbutyleneglycol.	"	.9759, 0°	Sorokin. B. S. C. 31, 72.
" " B. 220°	"	.9604, 24°	
Pseudohexylene glycol	"	.9638, 0°	Wurtz. J. 17, 518.
" "	"	.9202, 65°	
δ. Hexylene glycol	"	.9809, 0°	Lipp. Ber. 18, 3283.
Pinakone. B. 177°	"	.96, 15°	Linnemann. J. 18, 315.
"	"	.96718, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	.96087, 25°	
Octylene glycol.	$C_8H_{16}.(OH)_2$	.932, 0°	DeClermont. J. 17, 517.
" " B. 235°–240°	"	.920, 29°	
Butyrone pinakone	$C_{14}H_{28}.(OH)_2$	.87, 20°	Kurtz. A. C. P. 161, 205.
Diethylene alcohol	$C_4H_{10}O_3$	1.132, 0°	Wurtz. J. 16, 489.
Triethylene alcohol	$C_6H_{14}O_4$	1.138	" "
Methylenedimethyl ether, or methylal.	$CH_2.(OCH_3)_2$	.8551	Malaguti. Ann. (2), 70, 394.
" " "	"	.8604, 20°	Brühl. A. C. P. 203, 1.
" " "	"	.854, 20°	Arnhold. A. C. P. 240, 192.
Methylene diethyl ether	$CH_2.(OC_2H_5)_2$	.851, 0°	Greene. J. Am. C. S. 1, 523.
" " "	"	.8275, 16°.5	L. Henry. C. R. 101, 599.
" " "	"	.834, 20°	Arnhold. A. C. P. 240, 192.
Methylene dipropyl ether	$CH_2(OC_3H_7)_2$	.8345, 20°	" "
Methylene diisopropyl ether.	"	.831, 20°	" "
Methylene diisobutyl ether.	$CH_2(OC_4H_9)_2$	.825, 20°	" "
Methylenediisoamyl ether	$CH_2(OC_5H_{11})_2$	.835, 20°	" "
Methylene dioctyl ether	$CH_2(OC_8H_{17})_2$	.846, 20°	" "
Ethylene monethyl ether	$C_2H_4.OH.OC_2H_5$	.926, 13°	Demole. Ber. 9, 746.
Ethylene diethyl ether	$C_2H_4.(OC_2H_5)_2$	.7993, 0°	Wurtz. J. 11, 423.
Ethidene dimethyl ether, or dimethyl acetal.	$C_2H_4.(OCH_3)_2$	.8555, 0°	Wurtz. J. 9, 597.
" " "	"	.8674, 1°	Alsberg. J. 17, 485.
" " "	"	.8787, 0°	Dancer. J. 17, 484.
" " "	"	.8590, 14°	
" " "	"	.8503, 22°	
" " "	"	.8497, 23°	
" " "	"	.8476, 25°	
" " "	"	.8554, 15°	Kraemer and Grodzki. Ber. 9, 1980.

Name.	Formula.	Sp. Gravity.	Authority.
Ethidene dimethyl ether, or dimethyl acetal.	$C_2H_4.(OCH_3)_2$	.8655, 22°	Bachmann. A.C.P. 218, 49.
" " "	"	.8018, 62°.7	Schiff. G. C. I. 13, 177.
" " "	"	.85739, 15°	Perkin. J. P. C. (2), 32, 523.
" " "	"	.84764, 25°	
Ethidene methyl ethyl ether, or methyl ethyl acetal	$C_2H_4.(OCH_3)(OC_2H_5)$	.8535, 0°	Wurtz. J. 9, 597.
" " "	"	.8433, 22°	Bachmann. A.C.P. 218, 49.
" " "	"	.8655, 22°	Bachmann. A.C.P. 218, 53.
Ethidene diethyl ether, or acetal.	$C_2H_4.(OC_2H_5)_2$	.842, 21°	Döbereiner.
" " "	"	.823, 20°	Liebig. A.C.P.5,25.
" " "	"	.821, 22°.4	Stas. J. 1, 697.
" " "	"	.8314, 20°	Brühl. A. C. P. 203, 1.
" " "	"	.829, 13°	Engel and Girard. C. R. 90, 692.
" " "	"	.7363 } 103°.2	Schiff. G. C. I. 13, 177.
" " "	"	.7365 } 103°.2	
" " "	"	.826, 14°	Laatsch. A. C. P. 218, 26.
" " "	"	.8210, 22°	Bachmann. A.C.P. 218, 49.
" " "	"	.83187, 15°	Perkin. J. P. C. (2), 32, 523.
" " "	"	.82334, 25°	
Ethidene dipropyl ether, or propyl acetal. B. 147°	$C_2H_4.(OC_3H_7)_2$	.825, 22°.5	Girard. Ber.13,2232.
Ethidene diisobutyl ether, or isobutyl acetal. B.169°	$C_2H_4.(OC_4H_9)_2$	.816, 22°	" "
Ethidene diamyl ether, or diamyl acetal.	$C_2H_4.(OC_5H_{11})_2$	.8347, 15°	Alsberg. J. 17, 485.
	"	.8012, 22°	Bachmann. A.C.P. 218, 49.
Propidene dipropyl ether	$C_3H_6.(OC_3H_7)_2$	.8495, 0°	Schudel. J. C. S. 46, 1283.
Butidene diethyl ether, or isobutyl acetal.	$C_4H_8.(OC_2H_5)_2$	.9957, 12°.4	Oeconomides. Ber. 14, 1201.
Dimethyl valeral	$C_5H_{10}.(OCH_3)_2$	.852, 10°	Alsberg. J. 17, 486.
Diethyl valeral	$C_5H_{10}.(OC_2H_5)_2$	.835, 12°	" "
Diamyl valeral	$C_5H_{10}.(OC_5H_{11})_2$	.849, 7°	Alsberg. J. 17, 485.
Ethidene oxymethylate	$C_4H_8O.(OCH_3)_2$	.853, 12°.5	Laatsch. A. C. P. 218, 18.
Ethidene oxyethylate	$C_4H_8O(OC_2H_5)_2$	.891, 14°	" "
Ethidene oxypropylate	$C_4H_8O(OC_3H_7)_2$	.895, 14°	" "
Ethidene oxyisobutylate	$C_4H_8O(OC_4H_9)_2$	.879, 11°	" "
Ethidene oxyisoamylate	$C_4H_8O(OC_5H_{11})_2$	.874, 11°	" "
Ethylene diacetate	$C_2H_4.(C_2H_3O_2)_2$	1.128, 0°	Wurtz. J. 12, 485.
" "	"	1.1561, 20°	Brühl. Bei. 4, 782.
" "	"	1.11076, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.10183, 25°	
Ethylene dipropionate	$C_2H_4.(C_3H_5O_2)_2$	1.05440, 15°	" "
" "	"	1.04566, 25°	
Ethylene dibutyrate	$C_2H_4.(C_4H_7O_2)_2$	1.024, 0°	Wurtz. J. 12, 486.
Propylene diacetate	$C_3H_6.(C_2H_3O_2)_2$	1.109, 0°	Wurtz. J. 10, 464.

Name.	Formula.	Sp. Gravity.	Authority.
Propylene diacetate	$C_3 H_6.(C_2 H_3 O_2)_2$	1.070, 19°	Reboul. C. R. 79, 169.
Propylene divalerate	$C_3 H_6.(C_5 H_9 O_2)_2$	.98, 12°	Reboul. J. C. S. 36, 127.
β. Butylene monacetate	$C_4 H_8.OH.(C_2 H_3 O_2)$	1.055, 0°	Wurtz. C. R. 97, 473.
Hexylene diacetate	$C_6 H_{12}.(C_2 H_3 O_2)_2$	1.014, 0°	Wurtz. J. 17, 516.
Pseudohexylene diacetate	"	1.009, 0°	Wurtz. J. 17, 513.
Ethidene diacetate	$C_2 H_4.(C_2 H_3 O_2)_2$	1.060, 12°	Schiff. Ber. 9, 306.
" "	"	1.073, 15°	Franchimont. J. C. S. 44, 452.
" "	"	1.073, 15°	Rübencamp. A. C. P. 225, 267.
" "	"	1.07, 10°	Geuther. J. 17, 329.
Ethidene acetate propionate.	$C_2 H_4.(C_2 H_3 O_2)(C_3 H_5 O_2)$	1.046, 15°	Two preparations. Rübencamp. A. C. P. 225, 267.
" " "		1.042, 15°	
Ethidene dipropionate	$C_2 H_4.(C_3 H_5 O_2)_2$	1.020, 15°	Rübencamp. A. C. P. 225, 267.
Ethidene acetate butyrate	$C_2 H_4.(C_2 H_3 O_2)(C_4 H_7 O_2)$	1.016, 15°	Two preparations. Rübencamp. A. C. P. 225, 267.
" " "		1.018, 15°	
Ethidene dibutyrate	$C_2 H_4.(C_4 H_7 O_2)_2$	.9855, 15°	Rübencamp. A. C. P. 225, 267.
Ethidene acetate valerate	$C_2 H_4.(C_2 H_3 O_2)(C_5 H_9 O_2)$	.991, 15°	" "
Ethidene divalerate	$C_2 H_4.(C_5 H_9 O_2)_2$	.947, 15°	" "
Ethidene oxyformate	$C_6 H_{10} O_5$	1.184, 21°	Geuther. A. C. P. 226, 228.
Ethidene oxyacetate	$C_8 H_{14} O_5$	1.071, 16°	" "
Ethidene oxypropionate	$C_{10} H_{18} O_5$	1.027, 26°	" "
Ethidene oxybutyrate	$C_{12} H_{22} O_5$	.994, 20°	" "

9th. Ethers of Carbonic Acid.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl carbonate	$(C H_3)_2.C O_3$	1.069, 22°	Councler. Ber. 13, 1698.
" "	"	1.065, 17°	B. Röse. Ber. 13, 2418.
" "	"	1.060	Schreiner. Ber. 13, 2080.
Methyl ethyl carbonate. B. 104°.	$C H_3.C_2 H_5.C O_3$	1.0372	" "
" " " B. 115°.	"	1.0016	" "
Ethyl carbonate	$(C_2 H_5)_2.C O_3$	.975, 19°	Ettling. A. C. P. 19, 17.
" "	"	.9998, 0°	Kopp. A. C. P. 95, 307.
" "	"	.9780, 20°	
" "	"	.9762, 20°	Brühl. A. C. P. 203, 1.
" "	"	.9785	Schreiner. Ber. 13, 2080.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl propyl carbonate	$C_2H_5.C_3H_7.CO_3$	.9516, 20°	Pawlewski. Ber. 17, 1607.
Propyl carbonate	$(C_3H_7)_2.CO_3$	.968, 22°	Cahours. C. R. 77, 746.
" "	"	.949, 17°	Röse. Ber. 18, 2418.
Butyl carbonate	$(C_4H_9)_2.CO_3$	.9407, 0°	Lieben and Rossi. A. C. P. 165, 109.
" "	"	.9244, 20°	
" "	"	.9111, 40°	
Isobutyl carbonate	"	.919, 15°	Röse. Ber. 18, 2418.
Isoamyl carbonate	$(C_5H_{11})_2.CO_3$	.9144	Medlock. J. 2, 430.
" "	"	.9065, 15°.5	Bruce. J. 5, 605.
" "	"	.912, 15°	Röse. Ber. 18, 2418.
Ethyl orthocarbonate	$(C_2H_5)_4.CO_4$	.925	Bassett. J. 17, 477.
Propyl orthocarbonate	$(C_3H_7)_4.CO_4$	.911, 8°	Röse. Ber. 18, 2419.
Isobutyl orthocarbonate	$(C_4H_9)_4.CO_4$	.900, 8°	" "

10th. Acids and Ethers of the Oxalic Series.

Name.	Formula.	Sp. Gravity.	Authority.
Oxalic acid	$C_2H_2O_4$	2.00, 9°	Husemann. B. D. Z.
" "	$C_2H_2O_4.2H_2O$	1.507	Richter.
" "	"	1.622	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.629	Buignet. J. 14, 15.
" "	"	1.63, 9°	Husemann. B. D. Z.
" "	"	1.680	Schröder. Ber. 10, 851.
" "	"	1.581	Rüdorff. Ber. 12, 251.
" "	"	1.57	W. C. Smith. Am. J. P. 58, 145.
" "	"	1.653, 18°.5	Wilson. F. W. C.
Succinic acid	$C_4H_6O_4$	1.55	Richter.
" "	"	1.529, 9°, sublimed.	Husemann. B. D. Z.
" "	"	1.552, 9°, cryst.	
" "	"	1.567	Schröder. Ber. 10. 851.
Ethyl oxalic acid	"	1.2175, 20°	Anschütz. Ber. 16, 2412.
Pyrotartaric acid	$C_5H_8O_4$	1.408	Schröder. Ber. 13, 1070.
" "	"	1.413	
Methylisopropylmalonic acid.	$C_7H_{12}O_4$	.990, 15°	Romburgh. J. C. S. 52, 232.
Sebacic acid	$C_{10}H_{18}O_4$	1.1317, fused	Carlet. J. 6, 429.
Methyl oxalate	$C_4H_6O_4$	1.1566, 50°	Kopp. A. C. P. 95, 307.
" "	"	1.1479, 54°	Weger. A. C. P. 221, 61.
" "	"	1.0039, 163°.3	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl ethyl oxalate	$C_5H_8O_4$	1.27, 12°	Chancel. J. 3, 470.
" " "	"	1.15565, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" " "	"	.94693, 173°.7	
Ethyl oxalate	$C_6H_{10}O_4$	1.0929, 7°.5	Dumas and Boullay. P. A. 12, 430.
" "	"	1.086, 12°	Delffs. J. 7, 26.
" "	"	1.1010, 5°—10°	Regnault. P. A. 62, 50.
" "	"	1.0953, 10°–15°	
" "	"	1.0898, 15°–20°	
" "	"	1.1016, 0°	Kopp. A. C. P. 94, 257.
" "	"	1.0815, 18°.2	
" "	"	1.0824, 15°	Mendelejeff. J. 13, 7.
" "	"	1.0793, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.1023, 0°	Weger. A. C. P. 221, 61.
" "	"	1.1029, 0°	
" "	"	1.1030, 0°	
" "	"	1.08563, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.07609, 25°	
Propyl oxalate	$C_8H_{14}O_4$	1.018, 22°	Cahours. Les Mondes, 32, 280.
" "	"	1.0384, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" "	"	.80601, 213°.5	
Butyl oxalate	$C_{10}H_{18}O_4$	1.002, 14°	Cahours. C. C. 5, 20.
" "	"	1.0099, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" "	"	.780, 243°.4	
Ethyl heptyl oxalate	$C_{11}H_{20}O_4$	.99542, 0°	" "
" " "	"	.75493, 263°.71	
Amyl oxalate	$C_{12}H_{22}O_4$	.968, 11°	Delffs. J. 7, 26.
Propyl heptyl oxalate	"	.981435, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" " "	"	.72669, 284°.4	
Propyl octyl oxalate	$C_{13}H_{24}O_4$	.97245, 0°	" "
" " "	"	.71512, 291°.1	
Methyl malonate	$C_5H_8O_4$	1.135, 22°	Osterland. J. C. S. (2), 13, 142.
" "	"	1.16028, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.15110, 25°	
" "	"	1.1753, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" "	"	.95686, 180°.7	
Ethyl malonate	$C_7H_{12}O_4$	1.068, 18°	Conrad and Bischoff. A. C. P. 204, 127.
" "	"	1.06104, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.05248, 25°	
" "	"	1.07607, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" "	"	.86227, 198°.4	
Ethyl propyl malonate	$C_8H_{14}O_4$	1.04977, 0°	" "
" " "	"	.83542, 211°	
Propyl malonate	$C_9H_{16}O_4$	1.02705, 0°	" "
" "	"	.79966, 228°.3	
Butyl malonate	$C_{11}H_{20}O_4$	1.0049, 0°	" "
" "	"	.800073, 251°.5	

Name.	Formula.	Sp. Gravity.	Authority.
Methyl succinate	$C_6H_{10}O_4$	1.1179, 20°	Fehling. A.C.P. 49, 195.
" "	"	1.1162, 18°	Weger. A. C. P. 221, 61.
" "	"	.91200, 195°.2	
" "	"	1.12611, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.11718, 25°	
Methyl ethyl succinate	$C_7H_{12}O_4$	1.0925, 0°	Weger. A. C. P. 221, 61.
" " "	"	.86482, 208°.2	
Ethyl succinate	$C_8H_{14}O_4$	1.036	D'Arcet. Ann. (2), 58, 291.
" "	"	1.0718, 0°	Kopp. A. C. P. 95, 307.
" "	"	1.0475, 25°.5	
" "	"	1.0592 } 0°	Weger. A. C. P. 221, 61.
" "	"	1.0600	
" "	"	.82726, 215°.4	
" "	"	1.04645, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.03832, 25°	
Ethyl propyl succinate	$C_9H_{16}O_4$	1.03866, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" " "	"	.81476, 231°.1	
Propyl succinate	$C_{10}H_{18}O_4$	1.0189, 0°	" "
" "	"	.78183, 247°.1	
Isopropyl succinate	"	1.009, 0°	Silva. C. R. 69, 416.
" "	"	.997, 18°.5	
Ethyl butyl succinate	"	1.02178, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" " "	"	.78572, 247°	
Propyl butyl succinate	$C_{11}H_{20}O_4$	1.0106, 0°	" "
" " "	"	.77587, 258°.7	
Isobutyl succinate	$C_{12}H_{22}O_4$	.97374, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.96670, 25°	
Ethyl heptyl succinate	$C_{13}H_{24}O_4$	.98503, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" " "	"	.73134, 291°.4	
Isoamyl succinate	$C_{14}H_{26}O_4$	.9612, 13°	Guareschi and Del Zanna. Ber. 12, 1699.
Heptyl succinate	$C_{18}H_{34}O_4$	.951846, 0°	Wiens. Königsberg Inaug. Diss. 1887.
" "	"	.68174, 350°.1	
Ethyl methylmalonate	$C_8H_{14}O_4$	1.021, 22°	Conrad and Bischoff. A. C. P. 204, 202.
" "	"	1.02132, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.01295, 25°	
Methyl dimethylsuccinate	"	1.0568, 16°	Barnstein. A. C. P. 242, 126.
Methyl ethylsuccinate	"	1.051, 34°	Polko. A. C. P. 242, 113.
Ethyl pyrotartrate	$C_9H_{16}O_4$	1.025, 21°	Reboul. Ber. 9, 1129.
" "	"	1.01885, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.01126, 25°	
Ethyl ethylmalonate	"	1.008, 18°	Conrad and Bischoff. A. C. P. 204, 135.
" "	"	1.01235, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.00441, 25°	
Ethyl dimethylmalonate	"	.9965, 15°	Thorne. Ber. 14, 1644.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl dimethylmalonate	$C_9H_{16}O_4$	1.00153, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.99356, 25°	
Ethyl adipate	$C_{10}H_{18}O_4$	1.001, 20°.5	Malaguti. A. C. P. 56, 306.
Ethyl methylethylmalonate.	"	.994, 15°	Conrad and Bischoff. Ber. 13, 595.
Ethyl propylmalonate	"	.99309, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.98541, 25°	
Ethyl isopropylmalonate	"	.997, 20°	Conrad and Bischoff. Ber. 13, 595.
" "	"	.99271, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.98521, 25°	
Ethyl dimethylsuccinate	"	.9976, 17°	Levy and Engländer. A. C. P. 242, 201.
" "	"	1.0134, 17°	Barnstein. A. C. P. 242, 126.
Ethyl ethylsuccinate	"	1.030, 21°	Polko. A. C. P. 242, 113.
Ethyl diethylmalonate	$C_{11}H_{20}O_4$	.990, 16°	Conrad and Bischoff. A. C. P. 204, 139.
" "	"	1.0041, 0°	Shukowski. Ber. 21, ref. 57.
" "	"	.9901, 15°	
" "	"	.99167, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.98441, 25°	
Ethyl isobutylmalonate	"	.983, 15°	Conrad and Bischoff. Ber. 13, 595.
Ethyl secondary-butylmalonate.	"	.988, 15°	Romburgh. Ber. 20, ref. 376
Ethyl methylisopropylmalonate.	"	.990, 15°	Romburgh. Ber. 20, ref. 469.
Methyl suberate	$C_{10}H_{18}O_4$	1.014, 18°	Laurent. Ann. (2), 66, 162.
Ethyl suberate	$C_{12}H_{22}O_4$	1.003, 18°	Laurent. Ann. (2), 166, 160.
" "	"	.991, 15°	Hell. B. S. C. 19, 365.
" "	"	.98519, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.97826, 25°	
Ethyl tetramethylsuccinate.	"	1.012, 0°	Hell and Wittekind. Ber. 7, 319.
"	"	1.0015, 13°.5	
Methyl sebate	"	.985, 60°, 1.	Neison. J. C. S. (3), 1, 316.
Ethyl sebate	$C_{14}H_{26}O_4$	.965, 16°	Neison. J. C. S. (3), 1, 318.
" "	"	.96824, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.96049, 25°	
Butyl sebate	$C_{18}H_{34}O_4$	.9417, 0°	Gehring. C. R. 104, 1289.
" "	"	.9329, 15°	
Amyl sebate	$C_{20}H_{38}O_4$	.951, 18°	Neison. C. N. 32, 298.
Ethyl dioctylmalonate	$C_{23}H_{44}O_4$	.896, 18°	Conrad and Bischoff. Ber. 13, 595.
Ethyl acetomalonate	$C_9H_{14}O_5$	1.080, 23°	Ehrlich. B. S. C. 23, 73.
Ethyl acetosuccinate	$C_{10}H_{16}O_5$	1.079, 21°	Conrad. B. S. C. 23, 73.
" "	"	1.08809, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.08049, 25°	

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl acetoglutarate	$C_{11} H_{18} O_5$	1.0505, 14°.1	Wislicenus and Limpach. A. C. P. 192, 130.
Ethyl β methylacetosuccinate.	"	1.061, 27°	Hardtmuth. A.C.P. 192, 142.
Ethyl α methylacetoglutarate.	$C_{12} H_{20} O_5$	1.048, 20°	Wislicenus and Limpach. A. C. P. 192, 138.
Ethyl dimethylacetosuccinate.	"	1.057, 27°	Hardtmuth. A.C.P. 192, 142.
Ethyl β ethylacetosuccinate.	"	1.064, 16°	Thorne. J. C. S. 39, 337.
Ethyl lactosuccinate	$C_{11} H_{18} O_6$	1.119, 0°	Wurtz and Friedel. J. 14, 378.
Ethyl succinosuccinate	$C_{12} H_{16} O_6$	1.4057, 18°	Hermann. J. C. S. 42, 712.
Ethyl ethidenemalonate	$C_9 H_{14} O_4$	1.0435, 15°	Komnenos. A. C. P. 218, 158.

11th. Acids and Ethers of the Glycollic Series.

Name.	Formula.	Sp. Gravity.	Authority.
Glycollic acid	$C_2 H_4 O_3$	1.197, 13°	Cloëz. J. 5, 497.
Lactic acid	$C_3 H_6 O_3$	1.215, 10°	Gay Lussac and Pelouze. P. A. 29, 111.
" "	"	1.2485, 15°	Mendelejeff. J. 13,7.
" "	"	1.2403, 20°	Brühl. Bei. 4, 782.
Methyl glycollic acid	"	1.180	Heintz. J. 12, 359.
Ethyl oxyisobutyric acid	$C_6 H_{12} O_3$	1.0211, 0°	Hell and Waldbauer. Ber. 10, 450.
" " "	"	1.0101, 16°	
Amyl glycollic acid	$C_7 H_{14} O_3$	1.003	Siemens. J. 14, 451.
Methyl glycollate	$C_3 H_6 O_3$	1.1862	Schreiner. Bei. 3, 350.
Ethyl glycollate	$C_4 H_8 O_3$	1.1074	" "
" "	"	1.0333	Fahlberg. J. P. C. (2), 7, 340.
Propyl glycollate	$C_5 H_{10} O_3$	1.0837	Schreiner. Bei. 3, 350.
Methyl methylglycollate	$C_4 H_8 O_3$	1.0845	" "
Ethyl methylglycollate	$C_5 H_{10} O_3$	1.0746	" "
Propyl methylglycollate	$C_6 H_{12} O_3$	1.0592	" "
Methyl ethylglycollate	$C_5 H_{10} O_3$	1.0105	" "
Ethyl ethylglycollate	$C_6 H_{12} O_3$	.978	Schreiber. Z. C. 13, 168.
" "	"	.9960	Schreiner. Bei. 3, 350.
Propyl ethylglycollate	$C_7 H_{14} O_3$	.9896	" "

Name.	Formula.	Sp. Gravity.	Authority.
Methyl propylglycollate	$C_6H_{12}O_3$	.9845	Schreiner. Bei. 3, 350.
Ethyl propylglycollate	$C_7H_{14}O_3$	.9758	" "
Propyl propylglycollate	$C_8H_{16}O_3$	.9678	" "
Methyl lactate	$C_4H_8O_3$	1.1176	" "
Ethyl lactate	$C_5H_{10}O_3$	1.0542, 0°	Wurtz and Friedel. J. 14, 373.
" "	"	1.042, 13°	
" "	"	1.0540	Schreiner. Bei. 3, 350.
Ethyl methyllactate	$C_6H_{12}O_3$	1.0030	" "
Ethyl ethyllactate	$C_7H_{14}O_3$	.9203, 0°	Wurtz. J. 12, 294.
" "	"	.9540	Schreiner. Bei. 3, 350.
Ethyl oxyisobutyrate	$C_6H_{12}O_3$	.9931, 13°	Frankland and Duppa. P.T. 1866, 309.
" "	"	1.0750	Schreiner. Bei. 3, 350.
Ethyl methyloxybutyrate	$C_7H_{14}O_3$	.9768, 13°	Frankland and Duppa. J. 18, 381.
" "	"	1.0100	Schreiner. Bei. 3, 350.
Ethyl ethyloxybutyrate	$C_8H_{16}O_3$	.930, 19°	Duvillier. Ann. (5), 17, 533.
" "	"	.9540	Schreiner. Bei. 3, 350.
Methyl diethyloxyacetate	$C_7H_{14}O_3$	.9896, 16°.5	Frankland and Duppa. P.T. 1866, 309.
Ethyl diethyloxyacetate	$C_8H_{16}O_3$	.9613, 18°.7	" "
" "	"	.98	L. Henry. B. S. C. 19, 212.
Amyl diethyloxyacetate	$C_{11}H_{22}O_3$	.93227, 13°	Frankland and Duppa. P.T. 1866, 309.
Ethyl amylhydroxalate	$C_9H_{18}O_3$	.9449, 13°	Frankland and Duppa. J. 18, 382.
Ethyl ethylamylhydroxalate.	$C_{11}H_{22}O_3$	.9399, 13°	Frankland and Duppa. P.T. 1866, 309.
Ethyl diamyloxalate	$C_{14}H_{28}O_3$	.9137, 13°	Frankland and Duppa. J. 18, 383.
Ethyl acetoglycollate	$C_6H_{10}O_4$	1.0093, 17°	Heintz. J. 15, 292.
Ethyl acetolactate	$C_7H_{12}O_4$	1.0458, 17°	Wislicenus. J. 15, 300.
Ethyl propionoglycollate	"	1.0052, 22°	Senf. Ber. 14, 2416.
Ethyl butyroglycollate	$C_8H_{14}O_4$	1.0288, 22°	" "
Ethyl isobutyroglycollate	"	1.0240, 22°.5	" "
Ethyl butyrolactate	$C_9H_{16}O_4$	1.024, 0°	Wurtz. J. 12, 295.
" "	"	1.028, 0°	Wurtz. J. 13, 273.
Lactyl ethyl lactate	$C_8H_{14}O_5$	1.134, 0°	Wurtz and Friedel. J. 14, 377.
Ethyl diethylglyoxylate	$C_8H_{16}O_4$	.994, 18°	Schreiber. Z. C. 13, 168.
Oxybutyric lactone	$C_4H_6O_2$	1.1441, 0°	Saytzeff Ber. 14, 2688.
" "	"	1.1286, 16°	
" "	"	1.1302, 20°	Frühling. Ber. 15, 2622.
" "	"	1.1295, 10°	Henry. C. R. 101, 1158.

Name.	Formula.	Sp. Gravity.	Authority.
Ethylbutyric lactone	$C_6 H_{10} O_2$	1.0348, 16°	Chanlaroff. A. C. P. 226, 339.
Heptolactone	$C_7 H_{12} O_2$	.9818, 4°	Amthor. Ber. 14, 1718.
"	"	.992, 16°	Young. A. C. P. 216, 41.

12th. Acids and Ethers of the Pyruvic Series.

Name.	Formula.	Sp. Gravity.	Authority.
Pyruvic, pyroracemic, or acetyl-formic acid.	$C_3 H_4 O_3$	1.288, 18°	Völckel. J. 6, 426.
" "	"	1.2792	Berzelius.
" "	"	1.2403	Claisen and Shadwell. Ber. 11, 1567.
" "	"	1.2600	
" "	"	1.2415	Claisen and Shadwell. Ber. 11, 621.
Propionyl-formic acid	$C_4 H_6 O_3$	1.2000, 17°.5	Claisen and Moritz. Ber. 13, 2122.
β. Acetyl-propionic, or laevulinic acid.	$C_5 H_8 O_3$	1.135, 15°	Conrad. Ber. 11, 2178.
Methyl pyruvate	$C_4 H_6 O_3$	1.154, 0°	Oppenheim. B. S. C. 19, 254.
Methyl acetacetate	$C_5 H_8 O_3$	1.037, 9°	Brandes. J. 19, 306.
Ethyl acetacetate	$C_6 H_{10} O_3$	1.03, 5°	Geuther. J. 18, 303.
" "	"	1.0256, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.030, 15°	Elion. Ber. 17, ref. 568.
" "	"	1.0465, 0°	Schiff. Ber. 19, 560.
" "	"	.9880, 55°.8	
" "	"	.9644, 79°.2	
" "	"	.9029, 135°.5	
" "	"	.8458, 180°	
" "	"	1.03174, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.02353, 25°	
Isobutyl acetacetate	$C_8 H_{14} O_3$	.979, 0°	Emmerling and Oppenheim. Ber. 9, 1097.
" "	"	.932, 23°	
Amyl acetacetate	$C_9 H_{16} O_3$	.954, 10°	Conrad. A. C. P. 186, 231.
Methyl methylacetacetate	$C_6 H_{10} O_3$	1.020, 9°	Brandes. J. 19, 306.
Ethyl methylacetacetate	$C_7 H_{10} O_3$	.995, 14°	" "
Methyl laevulinate	$C_6 H_{10} O_3$	1.0684, 0°	Grote, Kehrer, and Tollens. A. C. P. 206, 221.
" "	"	1.0519, 20°	
Ethyl laevulinate	$C_7 H_{12} O_3$	1.0325, 0°	" "
" "	"	1.0156, 20°	
Propyl laevulinate	$C_8 H_{14} O_3$	1.0103, 0°	" "
" "	"	.9937, 20°	

Name.	Formula.	Sp. Gravity.	Authority.
Methyl ethylacetacetate	$C_7H_{12}O_3$	1.009, 6°	Geuther. J. 18, 303.
Ethyl ethylacetacetate	$C_8H_{14}O_3$	.998, 12°	" "
" "	"	.981, 16°	James. A. C. P. 226, 202.
" "	"	.9834, 16°	Frankland and Duppa.
Propyl ethylacetacetate	$C_9H_{16}O_3$	.981, 0°	Burton. A. C. J. 3, 385.
Amyl ethylacetacetate	$C_{11}H_{20}O_3$	.937, 26°	Conrad. A. C. P. 186, 232.
Ethyl dimethylacetacetate	$C_8H_{14}O_3$	.9913, 16°	Frankland and Duppa. J. 18, 309.
Ethyl propionylpropionate	"	.9948, 0°	Hellon and Oppenheim. Ber. 10, 701 and 861.
" "	"	.9827, 15°	
" "	"	.9870, 15°	Israel. A. C. P. 231, 197.
Ethyl methylethylacetacetate.	$C_9H_{16}O_3$	.974, 22°	Saur. A. C. P. 188, 275.
Ethyl isopropylacetacetate	"	98046, 0°	Frankland and Duppa. J. 20, 395.
Ethyl methylpropylacetacetate.	$C_{10}H_{18}O_3$	.9575, 17°	Jones. A. C. P. 226, 288.
Ethyl isobutylacetacetate	"	.951, 17°.5	Rohn. A. C. P. 190, 307.
Ethyl ethylpropionylpropionate.	"	.966, 15°	Israel. A. C. P. 231, 197.
Ethyl dipropylacetacetate	$C_{12}H_{22}O_3$	.9585, 0°	Burton. A. C. J. 3, 386.
Ethyl heptylacetacetate	$C_{13}H_{24}O_3$	.9324	Jourdan. Ber. 13, 434.
Ethyl octylacetacetate	$C_{14}H_{26}O_3$	.9354, 18°.5	Guthzeit. A. C. P. 204, 3.
Ethyl diisobutylacetacetate.	"	.947, 10°	Mixter. Ber. 7, 501.
Ethyl diheptylacetacetate	$C_{20}H_{38}O_3$	.8907, 17°.5	Jourdan. J. C. S. 38, 314.
Ethyl acetopyruvate	$C_7H_{10}O_4$	1.124, 21°	Claisen and Stylos. Ber. 20, 2189.
Ethyl diacetylacetate	$C_8H_{12}O_4$	1.044, 15°	Elion. Ber. 16, 1369.
" "	"	1.1, 15°	Elion. Ber. 16, 2762.
" "	"	1.064, 15°	James. A. C. P. 226, 202.
Ethyl carbacetacetate	$C_8H_{10}O_3$	1.186, 27°	Duisberg. Ber. 15, 1387.
Ethyl ethylideneaçetacetate.	$C_8H_{12}O_3$	1.0225, 15°	Claisen and Matthews. A. C. P. 218, 178.
Ethyl amylideneacetacetate.	$C_{11}H_{18}O_3$	.9612, 15°	Matthews. Ber. 16, 1872.
Ethyl ethoxylmethylacetacetate.	$C_9H_{16}O_4$	.976, 22°	Isbert. A. C. P. 234, 195.
Ethyl ethoxylethylacetacetate.	$C_{10}H_{18}O_4$	.957, 22°	Isbert. A. C. P. 234, 194.

13th. Acids and Ethers of the Acrylic Series.

Name.	Formula.	Sp. Gravity.	Authority.
Methylacrylic acid	$C_4H_6O_2$	1.0153, 20°	Brühl. Ber. 14, 2800.
β. Crotonic, or quartenylic acid.	"	1.018, 25°	Gouther. J.P.C. (2), 8, 442.
Pyroterebic acid	$C_6H_{10}O_2$	1.01	Rabourdin. A. C. P. 52, 395.
" "	"	1.006, 26°	Mielck. A.C.P. 180, 52.
Methylethylacrylic acid	"	.9812, 25°	Lieben and Zeisel. M. C. 4, 71.
Hydrosorbic acid	"	.969, 19°	Barringer and Fittig. Z. C. 18, 425.
Amyldecatoic acid	$C_{10}H_{18}O_2$	.9096, 0°	Borodin. ?
Moringic acid	$C_{15}H_{28}O_2$	.908, 12°.5	Walter. C. R. 22, 1143.
Oleic acid	$C_{18}H_{34}O_2$	.808, 19°	Chevreul.
Methyl acrylate. B. 80°.3	$C_4H_6O_2$	.977, 0°	Kahlbaum. Ber. 13, 2349.
" "	"	.961, 19°.2	
" "	"	.97388, 0°	Weger. A.C.P. 221, 61.
" "	"	.87194, 80°.3	
Liquid polymer of methyl acrylate.	$(C_4H_6O_2)_n$	1.140, 0°	Kahlbaum. Ber. 13, 2349.
" "	"	1.125, 18°	
Solid polymer of methyl acrylate.	"	1.2223, 15°.6	" "
" "	"	1.2222, 18°.2	
Ethyl acrylate. B. 98°.5	$C_5H_8O_2$	.9252, 0°	Caspary and Tollens. B. S. C. 20, 368.
" "	"	.9186, 15°	
" "	"	.93928, 0°	Weger. A. C. P. 221, 61.
" "	"	.81970, 98°.5	
Propyl acrylate. B. 122°.9	$C_6H_{10}O_2$	.91996, 0°	" "
" "	"	.7847, 122°.9	
Methyl crotonate	$C_5H_8O_2$	.9806, 4°	Kahlbaum. Ber. 12, 844.
Ethyl crotonate	$C_6H_{10}O_2$	.9188	
" "	"	.9199 20°	Brühl. A.C.P. 235,1.
" "	"	.9237	
" "	"	.92680, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.91846, 25°	
Ethyl β crotonate	"	.927, 19°	Geuther. J. P. C. (2), 3, 444.
Ethyl angelate	$C_7H_{12}O_2$	.9347, 0°	Beilstein and Wiegand. Ber. 17, 2261.
Ethyl tiglate	"	.926, 21°	Geuther and Fröhlich. Z.C. 13, 549.
" "	"	.9425, 0°	Beilstein and Wiegand. Ber. 17, 2261.
Ethyl ethylcrotonate	$C_8H_{14}O_2$	.9203, 13°	Frankland and Duppa. J. 18, 384.
Methyl oleate	$C_{19}H_{36}O_2$	.879, 18°	Laurent. Ann. (2), 65, 294.
Ethyl oleate	$C_{20}H_{38}O_2$	.871, 18°	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl oleate	$C_{20}H_{38}O_2$	.87589 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.87525	
" "	"	.87041 25°	
" "	"	.86991	
Methyl elaidate	$C_{19}H_{36}O_2$	.872, 18°	Laurent. Ann. (2), 65, 294.
Ethyl elaidate	$C_{20}H_{38}O_2$	.869, 18°	" "

14th. Derivatives of the Acrylic Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Acrolein, or acrylaldehyde	C_3H_4O	.8410, 20°	Brühl. Bei. 4, 780.
Metacrolein	$(C_3H_4O)_n$	1.03, 8°	Geuther. J. 17, 384.
Acropinacone	$C_6H_{10}O_2$	.99, 17°	Linnemann. J. 18, 317.
Acrolein ethylate	$C_5H_{10}O_2$	.936, 4°	Taubert. J. C. S. 31, 296.
Acrolein diacetate	$C_7H_{10}O_4$	1.076, 22°	Hübner and Geuther. J. 13, 307.
Crotonaldehyde	C_4H_6O	1.033, 0°	Roscoe and Schorlemmer's Treatise.
Diacetate from crotonaldehyde.	$C_8H_{12}O_4$	1.05, 14°	Lagermark and Eltekoff. Ber. 12, 694.
Tiglic aldehyde, or guajol	C_5H_8O	.871, 15°	Völckel. J. 7, 611.
β. Angelicalactone	$C_5H_6O_2$	1.1084, 0°	Wolff. A. C. P. 229, 257.
Methylethylacrolein	$C_6H_{10}O$	.8577, 20°	Lieben and Zeisel. M. C. 4, 18.
Amyldecaldehyde	$C_{10}H_{18}O$	.862, 0°	Borodin. Ber. 5, 480.
"	"	.848, 20°	
"	"	.861, 0°	Gäss and Hell. Ber. 8, 372.
"	"	.851, 14°	
Hexylpentylacrylic aldehyde.	$C_{14}H_{26}O$	.8494, 15°	Perkin, Jr. Ber. 15, 2804.
" "	"	.8416, 30°	
" "	"	.8392, 35°	
" "	"	.8504, 15°	Perkin, Jr. J. C. S. 44, 81.
Hexylpentylacrylic alcohol.	$C_{14}H_{28}O$	.8520, 15°	Perkin, Jr. Ber. 15, 2810.
" "	"	.8444, 30°	
" "	"	.8418, 35°	
Hexylpentylacrylic acetate.	$C_{16}H_{30}O_2$	.8680, 15°	Perkin, Jr. Ber. 15, 2809.
" "	"	.8597, 30°	
" "	"	.8568, 35°	

15th. Acids and Ethers, Malic-Tartaric Group.

Name.	Formula.	Sp. Gravity.	Authority.
Malic acid	$C_4 H_6 O_5$	1.559, 4°	Schröder. Ber. 12, 1611.
Tartaric acid	$C_4 H_6 O_6$	1.75	Richter.
" "	"	1.764	Schiff. J. 12, 41.
" "	"	1.739	Buignet. J. 14, 15.
" "	"	1.754	Schröder. Ber. 10, 851.
" "	"	1.77	W. C. Smith. Am. J. P. 53, 145.
" "	"	1.7617	Wiedemann and Lüdeking. P. A. (2), 25, 151.
" " Amorphous	"	1.6321	Wiedemann and Lüdeking. P. A. (2), 25, 151.
" "	"	1.7594, 7°	Perkin. J. C. S. 51, 866.
Racemic acid	$C_4 H_6 O_6$	1.7782, 7°	" "
" "	$C_4 H_6 O_6 . H_2 O$	1.75	Pasteur. J. 2, 309.
" "	"	1.69	Buignet. J. 14, 15.
" "	"	1.6873, 7°	Perkin. J. C. S. 51, 866.
Laevotartaric acid	"	1.7496	Pasteur. Ann. (3), 28, 72.
Methyl maleate	$C_6 H_8 O_4$	1.1529, 14°	Anschütz. Ber. 12, 2283.
" "	"	1.16029, 11°.8	Knops. V. H. V. 1887, 17.
" "	"	1.15532, 16°.6	Knops. V. H. V. 1887, 17.
" "	"	1.15172, 20°	Knops. V. H. V. 1887, 17.
" "	"	1.15060, 21°	Knops. V. H. V. 1887, 17.
" "	"	1.14562, 26°	Knops. V. H. V. 1887, 17.
" "	"	1.14211, 29°.4	Knops. V. H. V. 1887, 17.
" "	"	1.13827, 33°	Knops. V. H. V. 1887, 17.
Ethyl maleate	$C_8 H_{12} O_4$	1.06917, 20°	" "
Propyl maleate	$C_{10} H_{16} O_4$	1.02899, 20°	" "
Ethyl fumarate	$C_8 H_{12} O_4$	1.106, 11°	Henry. A. C. P. 156, 178.
" "	"	1.0522, 17°.5	Anschütz. Ber. 12, 2282.
" "	"	1.05199, 20°	Knops. V. H. V. 1887, 17.
Propyl fumarate	$C_{10} H_{16} O_4$	1.02732, 14°.3	" "
" "	"	1.02447, 17°.4	" "
" "	"	1.02203, 20°	" "
" "	"	1.02127, 20°.8	" "
" "	"	1.01691, 25°.5	" "
" "	"	1.01352, 29°.1	" "
" "	"	1.00978, 33°	" "
Methyl tartrate	$C_6 H_{10} O_6$	1.3403, 15°	Anschütz and Pictet. Ber. 13, 1177.
Ethyl tartrate	$C_8 H_{14} O_6$	1.1989	Landolt. Ber. 9, 910.
" "	"	1.2097, 14°	Anschütz and Pictet. Ber. 13, 1177.
" "	"	1.2097, 15°	Perkin. J. C. S. 51, 863.
" "	"	1.2019, 25°	Perkin. J. C. S. 51, 863.

NAME.	FORMULA.	SP. GRAVITY	AUTHORITY.
Ethyl racemate	$C_8 H_{14} O_6$	1.2098, 15°	Perkin. J. C. S. 51, 363.
" "	"	1.2019, 25°	
Propyl tartrate	$C_{10} H_{18} O_6$	1.1392, 17°	Anschütz and Pictet. Ber. 13, 1177.
Isopropyl tartrate	$C_{10} H_{18} O_6$	1.1300, 20°	Pictet. Ber. 15, 2242.

16th. Acids and Ethers, Citric Acid Group.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Citric acid	$C_6 H_8 O_7$	1.617	Richter.
" "	"	1.542	Schiff. J. 12, 41.
" "	"	1.553	Buignet. J. 14, 15.
" "	"	1.557	W. C. Smith. Am. J. P. 53, 145.
Itaconic acid	$C_5 H_6 O_4$	1.573	Schröder. Ber. 13, 1070.
" "	"	1.632	
Citraconic acid	"	1.616	" "
" "	"	1.618	
Citraconic anhydride	$C_5 H_4 O_3$	1.247	Watts' Dictionary.
" "	"	1.25360, 12°.4	Knops. V. H. V. 1887, 17.
" "	"	1.24894, 16°.6	
" "	"	1.24518, 20°	
" "	"	1.24405, 21°	
" "	"	1.23920, 25°.4	
" "	"	1.23501, 29°.2	
" "	"	1.23073, 33°	
Triethyl citrate	$C_{12} H_{20} O_7$	1.142, 21°	Malaguti. A. C. P. 21, 267.
" "	"	1.1369, 20°	Conen. Ber. 12, 1653.
Tetrethyl citrate	$C_{14} H_{24} O_7$	1.1022, 20°	" "
Ethyl aconitate	$C_{12} H_{18} O_6$	1.074, 14°	Watts' Dictionary.
" "	"	1.1064	Conen. Ber. 12, 1653.
Ethyl isaconitate	"	1.0505, 15°	Conrad and Guthzeit. A. C. P. 222, 255.
Methyl itaconate	$C_7 H_{10} O_4$	1.1399, 14°.7	Anschütz. Ber. 14, 2787.
" "	"	1.13195, 12°	Knops. V. H. V. 1887, 17.
" "	"	1.12410, 18°	
" "	"	1.12182, 20°	
" "	"	1.11882, 22°.5	
" "	"	1.11421, 27°.1	
" "	"	1.10847, 32°.4	
Polymer of methyl itaconate.	$(C_7 H_{10} O_4)_n$	1.3126, 20°	" "
Ethyl itaconate	$C_9 H_{14} O_4$	1.051, 15°	Anschütz. Ber. 14, 2787.
" "	"	1.04613, 20°	Knops. V. H. V. 1887, 17.
Polymer of ethyl itaconate	$(C_9 H_{14} O_4)_n$	1.2549, 20°	" "

Name.	Formula.	Sp. Gravity.	Authority.
Methyl citraconate	$C_7H_{10}O_4$	1.1168, 15°	Perkin. Ber. 14, 2541.
" "	"	1.1050, 30°	
" "	"	1.1172, 13°.8	O. Strecker. Ber. 14, 2785.
" "	"	1.1164, 15°.5	Gladstone. Bei. 9, 249.
" "	"	1.11043, 20°	Knops. V. H. V. 1887, 17.
Ethyl citraconate	$C_9H_{14}O_4$	1.1050, 15°	Perkin. Ber. 14, 2548.
" "	"	1.038, 30°	
" "	"	1.040, 18°.5	Watts' Dictionary.
" "	"	1.047, 15°	Petri. Ber. 14, 2785.
" "	"	1.048, 16°.5	Gladstone. Bei. 9, 249.
" "	"	1.06241, 20°	Knops. V. H. V. 1887, 17.
Methyl mesaconate	$C_7H_{10}O_4$	1.1254, 15°	Perkin. Ber. 14, 2543.
" "	"	1.1138, 30°	
" "	"	1.1293, 11°.8	O. Strecker. Ber. 14, 2785.
" "	"	1.1246, 16°	Gladstone. Bei. 9, 249.
" "	"	1.12966, 11°.9	Knops. V. H. V. 1887, 17.
" "	"	1.12462, 16°.4	
" "	"	1.12097, 20°	
" "	"	1.12011, 20°.8	
" "	"	1.11648, 24°.3	
" "	"	1.11180, 28°.6	
" "	"	1.10702, 33°	
Ethyl mesaconate	$C_9H_{14}O_4$	1.043, 20°	Pebal. J. 404.
" "	"	1.051, 15°	Perkin. Ber. 14, 2543.
" "	"	1.039, 30°	
" "	"	1.043, 20°	Petri. Ber. 14, 2785.
" "	"	1.050, 16°	Gladstone. Bei. 9, 249.
" "	"	1.04674, 20°	Knops. V. H. V. 1887, 17.
Methyl crotaconate	$C_7H_{10}O_4$	1.14, 15°	Claus. A. C. P. 191, 78.
Ethyl acetocitrate	$C_{14}H_{22}O_8$	1.1459, 15°	Ruhemann. Ber. 20, 802.
Ethyl terebate	$C_9H_{14}O_4$	1.111, 16°	Roser. A. C. P. 220, 255.

17th. Glycerin and its Derivatives.

Name.	Formula.	Sp. Gravity.	Authority.
Glycerin, or glycerol	$C_3 H_5 (O H)_3$	1.27, 10°	Chevreul.
" "	"	1.28, 15°	Pelouze. Ann. (2), 63, 19.
" "	"	1.260, 15°.5	Watts' Dictionary.
" "	"	1.115, 12°.5	Sokoloff. A. C. P. 106, 95.
" "	"	1.2636, 15°	Mendelejeff. J. 13, 7.
" "	"	1.26949, 6°.7	Mendelejeff. A. C. P. 114, 165.
" "	"	1.26244, 16°.6	
" "	"	1.2609	Godeffroy. C. C. (3), 6, 34.
" " Cryst.	"	1.261, 15°.5	Roos. C. N. 33, 39.
" "	"	1.2688, 0°	Emo. Bei. 6, 668.
" "	"	1.2590, 20°	Brühl. Bei. 4, 782.
" "	"	1.262, 17°.5	Strohmer. Ber. 17, ref. 206.
" "	"	1.2653, 15°	Gerlach. Ber. 17, ref. 522.
" "	"	1.26241, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.25881, 25°	
Hexyl glycerin	$C_6 H_{11} (O H)_3$	1.0936, 0°	Orloff. A. C. P. 233, 359.
Triethyl diglycerin	$C_{12} H_{26} O_5$	1.00, 14°	Reboul and Lourenço. J. 14, 675.
Glycerin ether	$(C_3 H_5)_2 O_3$	1.0907, 18°	Gegerfeldt. J. 24, 401.
" "	"	1.16, 16°	Zotta. A. C. P. 174, 87.
" "	"	1.1453, 0°	Silva. J. C. S. 40, 1122.
Glycide	$C_3 H_6 O_2$	1.165, 0°	Hanriot. Ann. (5), 17, 62.
Ethyl glycide	$C_5 H_{10} O_2$	a1.00	Reboul. J. 13, 465.
" "	"	.94, 12°	Henry. B. S. C. 18, 232.
Amyl glycide	$C_8 H_{16} O_2$	.90, 20°	Reboul. J. 13, 463.
Aceto-glyceral	$C_5 H_{10} O_3$	1.081, 0°	Harnitzky and Menschutkin. J. 18, 506.
Valero-glyceral	$C_8 H_{16} O_3$	1.027, 0°	" "
Trimethylin	$C_6 H_{14} O_3$	.9483, 0°	Alsberg. J. 17, 495.
Diethylin	$C_7 H_{16} O_3$	.92	Berthelot. J. 7, 450.
Triethylin	$C_9 H_{20} O_3$	.8955, 15°	Alsberg. J. 17, 495.
Triglycerin tetrethylin	$C_{17} H_{36} O_7$	1.022, 14°	Reboul and Lourenço. J. 14, 675.
Ethylamylin	$C_{10} H_{22} O_3$	.92	Reboul. J. 13, 465.
Monamylin	$C_8 H_{18} O_3$	.98, 20°	Reboul. J. 13, 464.
Diamylin	$C_{13} H_{28} O_3$	.907, 9°	Reboul. J. 13, 465.
Monoallylin	$C_6 H_{12} O_3$	1.1160, 0°	Tollens. A. C. P. 156, 149.
"	"	1.1018, 25°	
Diformin	$C_5 H_8 O_5$	1.304, 15°	Van Romburgh. Ber. 14, 2827.
Monacetin	$C_5 H_{10} O_4$	1.20	Berthelot. J. 6, 455.

Name.	Formula.	Sp. Gravity.	Authority.
Diacetin	$C_7 H_{12} O_5$	1.184	Berthelot. J. 6, 455.
"	"	1.148, 23°	Laufer. J. 1876, 343
Triacetin	$C_9 H_{14} O_6$	1.174	Berthelot. J. 7, 449.
Epiacetin	$C_5 H_8 O_3$	1.129, 20°	Breslauer. J. P. C. (2), 20, 188.
Polymer of epiacetin	$(C_5 H_8 O_3)_n$	1.204, 20°	" "
Monobutyrin	$C_7 H_{14} O_4$	1.088	Berthelot. J. 6, 455.
Dibutyrin	$C_{11} H_{20} O_5$	1.081	" "
"	"	1.084	
Tributyrin	$C_{15} H_{26} O_6$	1.056	Berthelot. J. 7, 449.
Monovalerin	$C_8 H_{16} O_4$	1.100	Berthelot. J. 6, 454.
Divalerin	$C_{13} H_{24} O_5$	1.059	" "
Cocinin	$C_{42} H_{80} O_6$	.92, 8°, s	Brandes.
Tristearin	$C_{57} H_{110} O_6$	.987, 10°	Kopp. A. C. P. 93, 194.
"	"	.9872, 15°	Three modifications. Duffy. J. 5, 510.
"	"	.9877, 15°	
"	"	.9867, 15°	
"	"	.9600, 51°.5	
"	"	1.0101, 15°	
"	"	1.0178, 15°	
"	"	1.0179, 15°	
"	"	1.009, 51°.5	
"	"	.9931, 65°.5	
"	"	.9746, 68°.2	
" Liquid	"	.9245, 65°.5	
Monolein	$C_{21} H_{40} O_4$	.947	Berthelot. J. 6, 454.
Diolein	$C_{39} H_{72} O_5$	.921, 21°	" "
Ethyl glycerate	$C_5 H_{10} O_4$	1.193, 6°	Henry. Ber. 4, 701.
Benzoiein	$C_{10} H_{12} O_4$	1.228	Berthelot. J. 6, 455.
Glycerin salicylate	$C_{10} H_{12} O_5$	1.3655	Göttig. Ber. 10, 1818.
Glycerin cinnamate		1.2704	Kahlbaum. Ber. 16, 1491.
" "		1.2708	

18th. The Allyl Group.

Name.	Formula.	Sp. Gravity.	Authority.
Allyl alcohol	$C_3 H_5 . O H$	.8581, 0°	Tollens and Henninger. A. C. P. 156, 134.
" "	"	.8478, 27°	
" "	"	.8709, 0°	Additional values are given. Tollens. A. C. P. 158, 104.
" "	"	.81832, 62°	
" "	"	.7846, 97°	
" "	"	.8569, 15°.5	Dittmar and Steuart. P. R. S. G. 10, 64.
" "	"	.86990, 0°	Thorpe. J. C. S. 37, 371.
" "	"	.77998, 96°.6	
" "	"	.8724, 0°	Zander. A. C. P. 214, 181.
" "	"	.7830, 96°.5	
" "	"	.7809, 94°.4	Schiff. G. C. I. 13, 177.

Name.	Formula.	Sp. Gravity.	Authority.
Allyl alcohol	$C_3 H_5 . O H$	.8540, 20°	Brühl. A. C. P. 200, 139.
" "	"	.8563, 23°	Gladstone. Bei. 9, 249.
" "	"	.85778, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.85067, 25°	
Ethylvinyl alcohol	$C_4 H_7 . O H$	.834, 0°	Nevolé. J. C. S. 32, 868.
" "	"	.818, 21°	
" "	"	.827, 0°	Lieben. J. C. S. 32, 868.
" "	"	.81, 22°	
Ethylvinylcarbinol	$C_5 H_{10} O$	.856, 0°	E. Wagner. B. S. C. 42, 330.
Methyl isocrotyl alcohol	$C_6 H_{12} O$	.8604 } 0°	Wurtz. J. 17, 515.
" " "	"	.8625 } 0°	
" " "	"	.842, 16°.2	Crow. C. N. 36, 264.
" " " ?	"	.891, 10°	Destrem. Ann. (5), 27, 50.
Allyldimethylcarbinol	"	.8438, 0°	Saytzeff. A. C. P. 185, 151.
"	"	.8307, 18°	
Diallyl monohydrate	"	.8367, 0°	Wurtz. J. 17, 515.
Allyldiethylcarbinol	$C_8 H_{16} O$	.8891, 0°	Schirokoff and Saytzeff. A. C. P. 196, 114.
"	"	.8711, 20°	
Allylmethylpropylcarbinol.	"	.8486, 0°	Semljanizin. Ber. 12, 2375.
"	"	.8345, 20°	
Isopropylallyldimethyl carbinol.	$C_9 H_{18} O$	.829, 17°.8	Dieff. J. P. C. (2), 27, 369.
Allyldipropylcarbinol	$C_{10} H_{20} O$	.8602, 0°	P. and A. Saytzeff. Ber. 11, 1939.
"	"	.8427, 24°	
Allyldiisopropylcarbinol	"	.8671, 0°	Lebedinsky. J. P. C. (2), 23, 23.
Propargyl alcohol	$C_3 H_4 O$	.9628, 21°	Henry. B. S. C. 18, 236.
" "	"	.9715, 20°	Brühl. Bei. 4, 780.
Diallylcarbinol	$C_7 H_{12} O$	.8758, 0°	M. Saytzeff. A. C. P. 185, 129.
"	"	.8644, 12°	
"	"	.8478, 32°	
Diallylmethylcarbinol	$C_8 H_{14} O$	.8638, 0°	Sorokin. A. C. P. 185, 169.
"	"	.8523, 13°	
Diallylethylcarbinol	$C_9 H_{16} O$	.8776, 0°	Smirensky. Ber. 14, 2688.
"	"	.8637, 17°	
Diallylpropylcarbinol	$C_{10} H_{18} O$	.8707, 0°	P. and A. Saytzeff. Ber. 11, 1259.
"	"	.8564, 20°	
Diallylisopropylcarbinol	"	.8647, 0°	Rjabinin and Saytzeff. Ber. 12, 689.
"	"	.8512, 20°	
Vinyl ethyl oxide	$C_2 H_3 . C_2 H_5 . O$	.7625, 17°.5	Wislicenus. A. C. P. 192, 109.
Methyl allyl oxide	$C H_3 . C_3 H_5 . O$	.77, 11°	Henry. B. S. C. 18, 232.
Ethyl allyl oxide	$C_2 H_5 . C_3 H_5 . O$	.7651, 20°	Brühl. Bei. 4, 780.
Allyl oxide	$(C_3 H_5)_2 . O$	.8223, 0°	Zander. A. C. P. 214, 181.
" "	"	.7217, 94°.3	
Methyl propargyl oxide	$C H_3 . C_3 H_3 . O$	.83, 12°.5	Henry. B. S. C. 18, 232.
Ethyl propargyl oxide	$C_2 H_5 . C_3 H_3 . O$	.8326, 20°	Brühl. Bei. 4, 780.

Name.	Formula.	Sp. Gravity.	Authority.
Amyl propargyl oxide	$C_5 H_{11}. C_3 H_3. O$	.84, 12°	Henry. B. S. C. 18, 232.
Diallylcarbyl methyl oxide.	$C_7 H_{11}. C H_3. O$	.8258, 0°	Rjabinin. Ber. 12, 2874.
" " "	"	.8096, 20°	
Diallylcarbyl ethyl oxide	$C_7 H_{11}. C_2 H_5. O$	.8218, 0°	" "
" " "	"	.8023, 20°	
Isopropylallyldimethylcarbyl methyl oxide.	$C_9 H_{17}. C H_3. O$	.8027, 4°	Kononowitsch. Ber. 18, ref. 105.
Allyl formate	$C_4 H_6 O_2$	.9322, 17°.5	Tollens, Weber, and Kempf. J. 21, 450.
Allyl acetate	$C_5 H_8 O_2$	.8220, 103°	Schiff. G. C. I. 18, 177.
" "	"	.9276, 20°	Brühl. Bei. 4, 780.
" "	"	.9258, 24°.5	Gladstone. Bei. 9, 249.
Ethylvinyl acetate	$C_6 H_{10} O_2$	.896, 0°	Nevolé. J. C. S. 32, 868.
" "	"	.892, 0°	Lieben. J. C. S. 32, 868.
Methylisocrotyl acetate	$C_8 H_{14} O_2$	.912	Wurtz. J. 17, 514.
Allyldimethylcarbyl acetate.	"	.9007, 0°	M. and A. Saytzeff. A. C. P. 185, 151.
" "	"	.8832, 18°.5	
Allyldipropylcarbyl acetate.	$C_{12} H_{22} O_2$	.8908, 0°	Saytzeff. Ber. 11, 1989.
" "	"	.8783, 21°	
Propargyl acetate	$C_5 H_6 O_2$	1.0031, 12°	Henry. J. C. S. (2), 11, 1128.
" "	"	1.0052, 20°	Brühl. Bei. 4, 780.
Diallylcarbyl acetate	$C_9 H_{14} O_2$	.9167, 0°	M. Saytzeff. A. C. P. 185, 129.
" "	"	.8997, 17°.5	
Diallylmethylcarbyl acetate.	$C_{10} H_{16} O_2$	.8997, 0°	Sorokin. A. C. P. 185, 169.
" "	"	.8738, 21°	
Allylacetic acid	$C_5 H_8 O_2$	.98656, 12°	Perkin. J. C. S. 49, 205.
" "	"	.98416, 15°	
" "	"	.97670, 25°	
Ethyl allylacetate	$C_7 H_{12} O_2$	.9222, 0°	Wurtz. J. 21, 446.
Allyloctylic acid	$C_{11} H_{20} O_2$	.91020, 25°	Perkin. J. C. S. 49, 205.
" "	"	.89930, 45°	
Ethyl allyloctylate	$C_{13} H_{24} O_2$	.88271, 15°	" "
" "	"	.87658, 25°	
Diallylacetic acid	$C_8 H_{12} O_2$	.9495, 25°	Wolff. Ber. 10, 1957.
" "	"	.9578, 18°	Reboul. J. C. S. 32, 594.
" "	"	.95756, 12°	Perkin. J. C. S. 49, 205.
" "	"	.95547, 15°	
" "	"	.94918, 25°	
Ethyl methoxyldiallylacetate.	$C_{11} H_{18} O_3$	.96066, 20°	Barataeff. J. P. C. (2), 35, 2.
Allyl acetacetate	$C_7 H_{10} O_3$	.99272, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	.98542, 25°	
Ethyl allylacetacetate	$C_9 H_{14} O_3$	.9988, 18°.5	Gladstone. Bei. 9, 249.
" "	"	.982, 20°	Zeidler. B. S. C. 23, 78.
Ethyl diallylacetacetate	$C_{12} H_{18} O_3$	.948, 25°	Wolff. Ber. 10, 1956.
Ethyl diallyloxyacetate	$C_{10} H_{16} O_3$	.9873, 0°	Saytzeff. Ber. 9, 77.
" "	"	.9718, 18°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl oxalate	$C_8 H_{10} O_4$	1.055, 15°.5	Hofmann and Cahours. J. 9, 585.
Ethyl allylmalonate	$C_{10} H_{16} O_4$	1.018, 16°	Conrad and Bischoff. Ber. 13, 595.
" "	"	1.01475, 14°	Gladstone. Bei. 9, 249.
" "	"	1.01397, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.00620, 25°	
Ethyl diallylmalonate	$C_{13} H_{20} O_4$	.996, 14°	Conrad and Bischoff. Ber. 13, 595.
" "	"	.99328, 20°	Matwejeff. Ber. 21, 181.
" "	"	1.00620, 6°.5	Perkin. J. C. S. 49, 205.
" "	"	.99940, 15°	
" "	"	.99252, 25°	
Butallylmethylcarbin oxide.	$C_6 H_{12} O_2$	1.0099, 21°	Kablukow. Ber. 21, ref. 54.
Butallylmethyl pinakone	$C_{12} H_{22} O_2$	.9682, 0°	Kablukow. Ber. 21, ref. 55.
" "	"	.9452, 24°	
Derivative of tetrabromdiallylcarbin acetate.	$C_{13} H_{20} O_7$	1.18013, 0°	Dieff. J. P. C. (2), 35, 20.

19th. Erythrite, Mannite, and the Carbohydrates.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Erythrite or erythrol	$C_4 H_6 (O H)_4$	1.590	Lamy. J. 5, 676.
" "	"	1.449 } 4°	Schröder. Ber. 12, 1561.
" "	"	1.452 } 4°	
Anhydride of erythrol	$C_4 H_6 O_2$	1.1323, 0°	Przybytek. Ber. 17, 1091.
" "	"	1.1132, 18°	
Mannite or mannitol	$C_6 H_8 (O H)_6$	1.521	Prunier. Ann. (5), 15, 22.
" "	"	1.485 } 4°	Schröder. Ber. 12, 1561.
" "	"	1.486 } 4°	
" "	"	1.489 } 4°	
Dulcite or dulcitol	"	1.466, 15°	Eichler. J. 9, 665.
Sorbite	$(C_6 H_{14} O_6)_2 . H_2 O$	1.654, 15°	Pelouze. J. 5, 655.
Pinite	$C_6 H_{12} O_5$	1.520	Berthelot. J. 8, 675.
Quercite	"	1.5845	Prunier. Bei. 2, 68.
Cane sugar, or saccharose	$C_{12} H_{22} O_{11}$	1.606	Brisson. P. des C.
" " "	"	1.600	Schübler and Renz.
" " "	"	1.593	Filhol.
" " "	"	1.596	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.5578	Brix. J. 7, 618.
" " "	"	1.63	Dubrunfaut.
" " "	"	1.5951, 15°	Maumené. B. S. C. 22, 33.
" " "	"	1.588, 4°	Schröder. Ber. 12, 561.
" " "	"	1.589	W. C. Smith. Am. J. P. 53, 148.

Name.	Formula.	Sp. Gravity.	Authority.
Cane sugar, or saccharose	$C_{12}H_{22}O_{11}$	1.58046, 17°.5	Gerlach.
" " " Fused, vitreous.	"	1.996, 14°.5	Morin. J. Ph. C. (4), 28, 34.
" " " Molten	"	1.6	Quincke. P. A. 138, 141.
" " "	"	1.5984	Wiedemann and Lüdeking. P. A. (2), 25, 151.
" " " Barley sugar.	"	1.5122	Wiedemann and Lüdeking. P. A. (2), 25, 151.
" " "	"	1.5928	Zehnder. P. A. (2), 29, 260.
Milk sugar, or lactose	"	1.534	Filhol.
" " "	"	1.53398, 4°	Playfair and Joule. J. C. S. 1, 138.
" " "	"	1.525, 4°	Schröder. Ber. 12, 561.
" " "	"	1.533	W. C. Smith. Am. J. P. 53, 148.
Melezitose	$C_{12}H_{22}O_{11}.H_2O$	1.540, 17°.5	Alekhine. J.C.S. 50, 684.
Glucose	$C_6H_{12}O_6.H_2O$	1.3861	Payen and Persoz.
"	"	1.391	Payen and Persoz.
"	"	1.54, 11°	Bödeker. B. D. Z.
"	"	1.57, 11°	Bödeker. B. D. Z.
" Fused	"	1.3	Quincke. P. A. 138, 141.
Inosite. Anhydrous	$C_6H_{12}O_6$	1.752	Tanret and Villiers. Ann. (5), 23, 392.
"	$C_6H_{12}O_6.2H_2O$	1.1154, 5°	Vohl. J. 11, 489.
"	"	1.535, 8°	Tanret and Villiers. C. R. 86, 486.
"	"	1.524, 15°	Tanret and Villiers. C. R. 86, 486.
Bergenite	$C_8H_{10}O_5.H_2O$	1.5445	Morelli. Ber. 14, 2694.
Starch	$(C_6H_{10}O_5)_n$	1.505	Payen.
"	"	1.530	Dietrich. Z. A. C. 5, 51.
"	"	1.56	Kopp. A. C. P. 35, 38.
" Arrowroot	"	1.5045, air dried	Flückiger. Z. C. 10, 445.
" Potato	"	1.5029, "	Flückiger. Z. C. 10, 445.
" "	"	1.6330, dried at 100°.	Flückiger. Z. C. 10, 445.
Dextrin	"	1.03843	O'Sullivan. J. 27, 880.
Inulin	"	1.470	Dragendorff. J. 22, 748.
"	"	1.462	Dubrunfaut.
"	"	1.3491	Kiliani. A. C. P. 205, 151.
Cellulose	"	1.525	Weltzien's "Zusammenstellung."
Gum	"	1.487, air dried	Flückiger. Z. C. 10, 445.
"	"	1.525, dried at 100°.	Flückiger. Z. C. 10, 445.
" Gum-arabic	"	1.355	Guérin-Varry. P. A. 29, 50.
" " tragacanth	"	1.384	Guérin-Varry. P. A. 29, 50.
" Senegal	"	1.436	Guérin-Varry. P. A. 29, 50.
" Bassora	"	1.359	Guérin-Varry. P. A. 29, 50.

Name.	Formula.	Sp. Gravity.	Authority.
Graminin	$6\,C_6H_{10}O_5.H_2O$	1.522, 12°	Ekstrand and Johanson. Ber. 21, 594.
Phlein	"	1.480	
Octaceto-diglucose	$C_{12}H_{14}(C_2H_3O_2)_8O_{11}$	1.27, 16°	Demole. Ber. 12, 1936.
Octaceto-saccharose	"	1.27, 16°	" "

20th. Miscellaneous Non-Aromatic Compounds.

Name.	Formula.	Sp. Gravity.	Authority.
Acetopropyl alcohol	$C_5H_{10}O_2$	1.00514, 15°	Perkin, Jr. J. C. S. 51, 830.
" "	"	1.00197, 20°	
" "	"	.99896, 25°	
Acetobutyl alcohol	$C_6H_{12}O_2$	1.0143, 0°	Lipp. Ber. 18, 3281.
" "	"	.99771, 4°	Perkin, Jr. J. C. S. 51, 719.
" "	"	.98947, 15°	
" "	"	.98270, 25°	
Methyl orthoformate	$C_4H_{10}O_3$	.974, 23°	Deutsch. Ber. 12, 115.
Ethyl orthoformate	$C_7H_{16}O_3$	.8964	Williamson.
Propyl orthoformate	$C_{10}H_{22}O_3$	.879, 23°	Deutsch. Ber. 12, 115.
Isobutyl orthoformate	$C_{13}H_{28}O_3$	.861	" "
Isoamyl orthoformate	$C_{16}H_{34}O_3$	.864	" "
Diethoxyl ether	$C_8H_{18}O_3$	.8924, 21°	Lieben. J. 20, 546.
Derivative of isobutylaldehyde.	$C_8H_{14}O$	.9575, 0°	Oeconomides. Ber. 14, 2581.
" "	$C_{10}H_{20}O_2$	.9415, 0°	" "
Derivative of valeral	$C_{10}H_{18}O$	.9027, 17°	Borodin. J. 17, 339.
" "	$C_{20}H_{38}O_3$	.895	Borodin. Ber. 5, 480.
" "	"	.900	
Derivative of oenanthol	$C_{28}H_{50}O$	.8831, 15°	Perkin. Ber. 15, 2805.
" "	"	.8751, 30°	
" "	"	.8723, 35°	
"Acetyl valeryl"	$C_7H_{12}O_2$	.8804, 15°.5	Olewinsky. J. 14, 463.
Diacetone alcohol	$C_6H_{12}O_2$	.9306, 25°	Heintz. A. C. P. 178, 349.
Methoxylmethyl ethyl acetone.	$C_7H_{14}O_2$	.855, 20°	James. J. C. S. 49, 50.
Dimethoxyl diethyl acetone.	$C_9H_{18}O_3$	.886, 15°	" "
From diethylacetone	$C_{20}H_{34}O_2$	.934, 12°	Geuther. J. P. C. (2), 6, 160.
Ethyl diacetone carbonate	$C_{10}H_{18}O_3$	.9738, 20°	Frankland and Duppa. J. 18, 306.
Mesityl oxide	$C_6H_{10}O$	.848, 23°	Fittig. J. 12, 344.
" "	"	.8528, 19°	Gladstone. Bei. 9, 249.
" "	"	.8578, 20°	Brühl. A. C. P. 235, 1.
Homologue of mesityl oxide.	$C_8H_{14}O$	.8547, 15°.4	Schramm. Ber. 16, 1581.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phorone	$C_9H_{14}O$	.932 } 12°	Fittig. J. 12, 344.
"	"	.939 } 12°	
"	"	.9614, 20°	Schwanert. J. 15, 464.
"	"	.9645, 15°	Schulze. Ber. 15, 64.
"	"	.885, 20°	Brühl. A. C. P. 235, 1.
"	"	.8793, 27°	
"	"	.8785, 28°	
"	"	.8776, 29°	
Aldol	$C_4H_8O_2$	1.1208, 0°	Wurtz. B. S. C. 18, 436.
"	"	1.1094, 16°	
"	"	1.0819, 49°.6	
Derivative of aldol	$C_8H_{16}O_4$	1.0941 } 0°	Wurtz. C. R. 97, 1526.
" "	"	1.0951 } 0°	
" "	"	1.0953 } 0°	
Diacetate from the above compound.	$C_{12}H_{20}O_6$	1.095, 0°	" "
Derivative of laevulinic ether.	$C_{14}H_{22}O_7$	1.097, 15°	Conrad and Guthzeit. Ber. 17, 2286.
Diethyl glycollic ether	$C_{20}H_{36}O_{10}$	1.01, 19°	Geuther. J. 20, 455.
Propidene acetic acid	$C_5H_8O_2$	.9922, 15°	Komnenos. A. C. P. 218, 167.
Acetyl trimethylene	C_5H_8O	.90471, 15°	Perkin, Jr. J. C. S. 51, 832.
" "	"	.90083, 20°	
" "	"	.89706, 25°	
Ethyl acetyltrimethylene-carboxylate.	$C_8H_{12}O_3$	1.03436, 4°	Perkin, Jr. J. C. S. 47, 801.
"	"	1.03256, 6°.5	
" "	"	1.02549, 15°	
" "	"	1.01834, 25°	
" "	"	1.0425, 25°.2	Gladstone. Ber. 19, 2568.
" "	"	1.05174 } 15°	Two preparations. Perkin, Jr. J. C. S. 51, 826.
" "	"	1.05152 } 15°	
" "	"	1.04810, 20°	
" "	"	1.04390, 25°	
" "	"	1.04703 } 15°	
" "	"	1.04753 } 15°	
" "	"	1.03930, 25°	
Ethyl trimethylenedicarboxylate.	$C_9H_{14}O_4$	1.0708, 7°	Gladstone. J. C. S. 51, 852.
" "	"	1.06455, 15°	Perkin. J. C. S. 51, 852.
" "	"	1.05657, 25°	
" "	"	1.06463, 15°	Perkin, Jr. J. C. S. 47, 801.
" "	"	1.05664, 25°	
Ethyl trimethylenetricarboxylate.	$C_{12}H_{18}O_6$	1.127, 15°	Conrad and Guthzeit. Ber. 17, 1186.
Tetramethylenemonocarboxylic acid.	$C_5H_8O_2$	1.05480, 15°	Perkin. J. C. S. 51, 1.
"	"	1.05116, 20°	
"	"	1.04761, 25°	
Ethyl tetramethylenedicarboxylate.	$C_{10}H_{16}O_4$	1.0484, 14°	Gladstone. Bei. 9, 249.
" "	"	1.05328, 9°	Perkin. J. C. S. 51, 1.
" "	"	1.04817, 15°	
" "	"	1.04051, 25°	
Ethyl acetyltetramethylenecarboxylate.	$C_9H_{14}O_3$	1.0668, 13°	Gladstone. Bei. 9, 249.
Methylpentamethylenemonocarboxylic acid.	$C_7H_{12}O_2$	1.02054, 15°	Two lots. Perkin. J. C. S 53, 195 and 199.
"	"	1.01739, 20°	
"	"	1.01438, 25°	

Name.	Formula.	Sp. Gravity.	Authority.
Methylpentamethylene-monocarboxylic acid.	$C_7H_{12}O_2$	1.0256, 4°	Two lots. Perkin. J. C. S. 53, 195 and 199.
"	"	1.0208, 10°	
"	"	1.0172, 15°	
"	"	1.0139, 20°	
"	"	1.0109, 25°	
Methylpentamethylene methyl ketone.	$C_8H_{14}O$	.9222, 4°	Perkin. J. C. S. 53, 200.
"	"	.9174, 10°	
"	"	.9136, 15°	
"	"	.9100, 20°	
"	"	.9070, 25°	
Methylhexamethylene-monocarboxylic acid.	$C_8H_{14}O_2$	1.0079, 4°	Perkin. J. C. S. 53, 209.
"	"	1.0038, 10°	
"	"	.99982, 15°	
"	"	.9966, 20°	
"	"	.9940, 25°	
Methyldehydrohexone	$C_6H_{10}O$	.92272, 4°	Perkin. J. C. S. 51, 719.
"	"	.91278, 15°	
"	"	.90502, 25°	
Ethyl methyldehydrohexonecarboxylate.	$C_9H_{14}O_3$	1.06457, 15°	Three lots. Perkin. J. C. S. 51, 711 and 718.
" "	"	1.05840, 25°	
" "	"	1.06840, 15°	
" "	"	1.06470, 20°	
" "	"	1.06137, 25°	
" "	"	1.0744, 9°	
" "	"	1.0696, 15°	
" "	"	1.0660, 20°	
" "	"	1.0626, 25°	
Ethyl methenyltricarboxylate.	$C_{10}H_{16}O_6$	1.10, 19°	Conrad. Ber. 12, 1236.
Ethyl ethenyltricarboxylate.	$C_{11}H_{18}O_6$	1.089, 17°	Bischoff. A. C. P. 214, 39.
Methyl diethyl-β-methylethenyltricarboxylate.	"	1.079, 15°	Bischoff. A. C. P. 214, 56.
Ethyl β-methylethenyltricarboxylate.	$C_{12}H_{20}O_6$	1.092, 16°	Bischoff. Ber. 18, 2165.
Ethyl α β-dimethylethenyltricarboxylate.	$C_{13}H_{22}O_6$	1.0745, 15°	Bischoff and Rach. A. C. P. 234, 54.
Ethyl butenyltricarboxylate.	"	1.065, 17°	Polko. A. C. P. 242, 118.
Ethyl isobutenyltricarboxylate.	"	1.064, 17°	Barnstein. A. C. P. 242, 126.
" "	"	1.0805, 18°	Levy and Engländer. A. C. P. 242, 210.
Ethyl propylethenyltricarboxylate.	$C_{14}H_{24}O_6$	1.052, 18°	Waltz. A. C. P. 214, 58.
Ethyl dicarboxylglutaconate.	$C_{15}H_{22}O_8$	1.131, 15°	Conrad and Guthzeit. Ber. 15, 2842.
Ethyl isoallylenetetracarboxylate.	$C_{15}H_{24}O_8$	1.102, 15°	Bischoff. Ber. 18, 2164.
Ethyl dimethylacetylenetetracarboxylate.	$C_{16}H_{26}O_8$	1.114, 15°	Bischoff and Rach. A. C. P. 234, 54.
Methylisopropenylcarbinol.	$C_5H_{10}O$	.8571, 0°	Kondakoff. Ber. 18, ref. 660.
"	"	.8419, 20°.5	
Pyruvic acetate	$C_5H_8O_3$	1.053, 11°	Henry. B. S. C. 19, 219.
Ethyl pyruvyl ether	$C_5H_{10}O_2$	.92, 18°	Henry. Ber. 14, 2272.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Parasorbic acid	$C_6H_8O_2$	1.068, 15°	Hofmann. J. C. S. 12, 322.
Derivative of mannite	C_6H_8O	.9396, 0°	Fauconnier. J.C.S. 48, 743.
Methyl mucate	$C_8H_{14}O_8$	1.48 } 20°	Malaguti. Ann. (2), 63, 86.
" "	"	1.50 } 20°	
Ethyl mucate	$C_{10}H_{18}O_8$	1.17 } 20°	" "
" "	"	1.32 } 20°	
Valerylene diacetate	$C_9H_{16}O_4$	.963	Guthrie and Kolbe. J. 12, 365.
Conylene diacetate	$C_{12}H_{20}O_4$	.988, 18°.2	Wertheim. J. 16, 438.
Amenyl valerone	$C_{14}H_{26}O$	.836, 7°	Geuther, Fröhlich, and Loos. Ber. 13, 1856.
Linoleic acid	$C_{18}H_{32}O_2$	.9206, 14°	Schüler. J. 10, 359.
Ricinoleic acid	$C_{18}H_{34}O_3$	.940, 15°	Saalmüller. J. 1, 562.
" "	"	.9502, 15°	Norton and Richardson. A. C. J. 10, 57.
Distillate from linoleic acid.	$C_{20}H_{36}O_2$	.9108, 15°	" "
Distillate from ricinoleic acid.	"	.912	" "
Furfurane	C_4H_4O	.9644, 0°	Henninger. Ann. (6), 7, 209.
"	"	.9444, 15°	
Dihydrofurfurane	C_4H_6O	.9663 } 0°	" "
"	"	.9684 } 0°	
"	"	.9503, 15°	
Erythrol. (Crotonylene glycol).	$C_4H_8O_2$	1.06165, 0°	" "
"	"	1.04653, 20°	
Furfurol	$C_5H_4O_2$	1.1648, 15°.6	Stenhouse. J. 1, 732.
"	"	1.1636, 18°.5	Stenhouse. J. 3, 513.
"	"	1.168, 15°.5	Fownes. P. T. 1845, 253.
"	"	1.134 } 15°	Völckel. J. 5, 652.
"	"	1.150 } 15°	
"	"	1.1006, 27°	Stenhouse. P. M. (3), 18, 124.
"	"	.9310, 162°	Ramsay. J. C. S. 35, 463.
"	"	1.0025 } 160°.5 bp.	Schiff. G. C. I. 13, 177.
"	"	1.0026 } 160°.5 bp.	
"	"	1.1344, 19°	Gladstone. Bei. 9, 249.
"	"	1.1594, 20°	Brühl. A. C. P. 235, 1.
Ethylfurfurcarbinol	$C_7H_{10}O_2$	1.066, 0°	Pawlinoff and Wagner. Ber. 17, 1967.
"	"	1.053, 15°.5	
Furfurbutylene	$C_8H_{10}O$	.9509, 14°.5	Toennies and Staub. Ber. 17, 852.
Fucusol	$C_5H_4O_2$	1.150, 13°.5	Stenhouse. J. 3, 513.
Ethyl pyromucate	$C_7H_8O_3$	1.297, 20°	Malaguti. J. P. C. 41, 224.
Triethylpropylphycite	$C_9H_{20}O_4$	.976, 0°	Wolff. A. C. P. 150, 56.
"	"	.96051, 16°.5	

Name.	Formula.	Sp. Gravity.	Authority.
Acid from petroleum	$C_{11}H_{20}O_2$	.982, 0°	Hell and Medinger. Ber. 7, 1218.
" " "	"	.969, 23°	
Ethyl ether of the above	$C_{13}H_{24}O_2$	.939, 0°	" "
" " " acid.	"	.919, 27°	
From epichlorhydrin and chlorocarbonic ether.	$C_6H_{10}O_3$	.9931, 21°.5	Kelly. Ber. 11, 2226.

21st. Phenols.

Name.	Formula.	Sp. Gravity.	Authority.
Phenol	$C_6H_5.OH$	1.062, 20°	Runge. P.A. 32, 308.
"	"	1.065, 18°	Laurent. Ann. (3), 3, 195.
"	"	1.0627	Scrugham. J. C. S. 7, 237.
"	"	1.0808, 0°, l.	Kopp. A. C. P. 95, 307.
"	"	1.0597, 32°.9	
"	"	1.0554	Duclos. A.C.P. 109, 135.
"	"	1.068	Church. J. C. S. 16, 76.
"	"	1.0667, 38°	Graebe.
"	"	1.0709, 38°	Zotta. A. C. P. 174, 87.
"	"	1.066, cryst.	Hamberg. Ber. 4, 751.
"	"	1.05433, 40°	Adrieenz. Ber. 6, 443.
"	"	1.04663, 50°	
"	"	1.03804, 60°	
"	"	1.02890, 70°	
"	"	1.01950, 80°	
"	"	1.01015, 90°	
"	"	1.00116, 100°	
"	"	1.0558, 46°	From four different sources. Ladenburg. Ber. 7, 1687.
"	"	1.0463, 56°	
"	"	1.0567, 46°	
"	"	1.0470, 56°	
"	"	1.0560, 46°	
"	"	1.0467, 56°	
"	"	1.0559, 46°	
"	"	1.0476, 56°	
"	"	.8789, 186°	Ramsay. J. C. S. 35, 463.
"	"	1.0591, 40°	Bedson and Williams. Ber. 14, 2551.
"	"	1.0545, 45°	
"	"	1.0722, 20°	Landolt. P. A. 122, 558.
"	"	1.0702, 20°	Brühl. Bei. 4, 782.
"	"	1.05810, 4°	Flink. Bei. 8, 262.
"	"	1.0598, 21°	Gladstone. Bei. 9, 249.

Name.	Formula.	Sp. Gravity.	Authority.
Phenol	$C_6H_5.OH$	1.0906, 0°, l.	Pinette. A. C. P. 243, 32.
"	"	1.0387, 15°.5	
"	"	.9217, 182°.9	
Diphenol. Pyrocatechin	$C_6H_4(OH)_2$. 1.2	1.340 } 4°	Schröder. Ber. 12, 561.
" "	"	1.348 }	
" Resorcin	" 1.3	1.2728, 0°	Calderon. J. R. C. 5 313.
" "	"	1.2717, 15°	
" "	"	1.276 } 4°	Schröder. Ber. 12, 561.
" "	"	1.289 }	
" "	"	1.1795, 100°.2	Schiff. A. C. P. 223, 247.
" Hydroquinone	" 1.4	1.324 } 4°	Schröder. Ber. 12, 561.
" "	"	1.328 }	
Triphenol. Pyrogallol	$C_6H_3.(OH)_3$	1.443 } 4°	" "
" "	"	1.463 }	
Orthokresol	$C_6H_4.CH_3.OH$	1.039, 23°	Gladstone. Bei. 9, 249.
"	"	1.0578, 0°, l.	Pinette. A. C. P. 243, 32.
"	"	1.0053, 65°.6	
"	"	.8867, 190°.8	
Metakresol	"	1.0330, 19°	Gladstone. Bei. 9, 249.
"	"	1.0498, 0°	Pinette. A. C. P. 243, 32.
"	"	.8744, 202°.8	
Parakresol. ?	"	1.033, 23°	v. Rad. J. 22, 448.
"	"	1.0522, 0°, l.	Pinette. A. C. P. 243, 32.
"	"	.9962, 65°.6	
"	"	.8728, 201°.8	
Ethylphenol	$C_6H_4.C_2H_5.OH$	1.049, 14°	Auer. Ber. 17, 669.
Orthopropylphenol	$C_6H_4.C_3H_7.OH$	1.015, 0°	Spica. Ber. 12, 295.
"	"	.9370, 100°	
Parapropylphenol	"	1.0091, 0°	" "
"	"	.9324, 100°	
Orthoisopropylphenol	"	1.01243, 0°	Fileti. G. C. I. 16, 113.
"	"	.92765, 100°	
Xylenol. 1.3.4	$C_6H_3.CH_3.CH_3.OH$	1.036, 0°	Wurtz. J. 21, 460.
" "	"	.9700, 81°	
" "	"	1.0362, 0°	Jacobsen. Ber. 11, 24.
" ?	"	1.0233, 23°	Wroblevsky. J. 21, 459.
" ?	"	.9709, 81°	Wurtz. J. 21, 460.
" 1.3. ?	"	1.0366, 0°	Lako. J. 1876, 454.
"	"	1.0242, 15°.5	
"	"	1.0129, 30°	
"	"	1.0020, 45°	
"	"	.9903, 59°	
"	"	.9673, 100°	
Phloretol	$C_8H_{10}O$	1.0374, 12°	Hlasiwetz. J. 10, 329.
Isopropylkresol	$C_6H_3.C_3H_7.CH_3.OH$	1.00122, 0°	Spica. J. C. S. 44, 460.
"	"	.91971, 100°	
Propylkresol. Carvacrol	"	.98558, 15°	Jacobsen. Ber. 11, 1060.
" "	"	.981, 15°	Jahns. Ber. 15, 817.
" Thymol	"	1.0285, s.	Stenhouse. J. 9, 624.
" "	"	1.01068, 0°	Two preparations. Pisati and Paterno. Ber. 8, 71.
" "	"	1.009136, 0°	
" "	"	.92424, 100°	

Name.	Formula.	Sp. Gravity	Authority.
Propylkresol. Thymol	$C_6H_3.C_3H_7.CH_3.OH$	1.069	Rüdorff. Ber. 12, 252.
" "	"	1.0101, 4°	Schiff. Ber. 13, 1408.
" "	"	.939, 25°.5	Haines. J. 9, 623.
" "	"	.988, 0°	Febve. Ber. 14, 1720.
" "	"	1.029	Schröder. Ber. 14, 2516.
" "	"	1.034	
" "	"	.96895, 24°.4	Nasini and Bernheimer. G. C. I. 15, 50.
" "	"	.92838, 77°.8	
" "	"	.9499, 49°.8	Schiff. A. C. P. 223, 247.
" "	"	.9941, 0°, l.	Pinette. A. C. P. 243, 32.
" "	"	.9401, 16°.5	
" "	"	.7928, 231°.8	
Orthobutenylphenol	$C_6H_4.C_4H_7.OH$	1.0171	Perkin. C. N. 89, 89.
Guaiacol. 1.2	$C_6H_4.OCH_3.OH$	1.1171, 18°	Hlasiwetz. A. C. P. 106, 366.
"	"	1.119, 22°	Sobrero.
"	"	1.125, 16°	Völckel. J. 7, 610.
"	"	1.119, 17°.5	Gorup-Besanez.
Kreosol. 1.3.4	$C_6H_3.OCH_3.CH_3.OH$	1.0894, 13°	Hlasiwetz. A. C. P. 106, 354.
Orcin	$C_6H_3.CH_3.(OH)_2.H_2O$	1.283 } 4°	Schröder. Ber. 12, 1611.
"	"	1.296 } 4°	

22d. Aromatic Alcohols.

Name.	Formula.	Sp. Gravity.	Authority.
Benzyl alcohol	$C_6H_5.CH_2OH$	1.059	Cannizzaro. J. 7, 585.
" "	"	1.0628, 0°	Kopp. A. C. P. 94, 257.
" "	"	1.0507, 15°.4	
" "	"	1.0465, 19°	Kraut. A. C. P. 152, 184.
" "	"	1.0429, 20°	Brühl. Bei. 4, 781.
" "	"	1.0412, 22°	Gladstone. Bei. 9, 249.
Benzylcarbinol	$C_6H_5.CH_2.CH_2OH$	1.0337, 21°	Radziszewski. Ber. 9, 373.
Phenylpropyl alcohol	$C_6H_5.CH_2.CH_2.CH_2OH$	1.008, 18°	Rügheimer. A. C. P. 172, 126.
" "	"	1.0079, 20°	Brühl. Bei. 4, 781.
Orthoxylyl alcohol	$C_6H_4.CH_3.CH_2OH$	1.08, s.	Colson. Ann. (6), 6, 86.
" "	"	1.023, 40°, l.	
Metaxylyl alcohol	"	.9157, 17°	Radziszewski and Wispek. Ber. 15, 1747.
" "	"	1.036, 0°	Colson. Ann. (6), 6, 86.
Ethylphenylcarbinol	$C_6H_4.CHOH.CH_3$	1.016, 0°	Wagner. Ber. 17, ref. 317.
"	" CH_3	.994, 23°	
Cymyl alcohol. 1.4	$C_6H_4.C_3H_7.CH_2OH$	.9775, 15°	Kraut. A. C. P. 192, 224.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Saligenin	$C_6H_4.OH.CH_2OH$	1.1613, 25°	Beilstein and Seelheim. J. 14, 765.
Methylsaligenin. 1.2	$C_6H_4.OCH_3.CH_2OH$	1.1200, 23°	Cannizzaro and Koerner. B. S. C. 18, 182.
" "	"	1.0532, 100°	
Anisic alcohol. 1.4	"	1.1093, 26°	" "
" "	"	1.0507, 100°	
Acetophenone alcohol	$C_8H_8O_2$	1.013	Emmerling and Engler. Ber. 6, 1006.
Cinnamic alcohol	$C_9H_{10}O$	1.0402, 24°.8	Nasini. Bei. 9, 331.
" "	"	1.04017, 24°.8	Nasini and Bernheimer. G. C. I. 15, 50.
" "	"	1.03024, 36°.1	
" "	"	1.0027, 77°.3	
" "	"	1.0318, 13°	Gladstone. Bei. 9, 249.
" "	"	1.0440, 20°	Brühl. A. C. P. 235, 1.
" "	"	1.0354, 31°	
" "	"	1.0346, 32°	
" "	"	1.0338, 33°	
Ethylphenylacetylene alcohol.	$C_{10}H_{12}O$	.985, 19°	Morgan. J. C. S. (3), 1, 168.
Orthoxylene glycol	$C_6H_4(CH_2OH)_2$	1.133, 75°	Colson. Ann. (6), 6, 86.
Metaxylene glycol	"	1.161, 18°, surfused.	" "
" "	"	1.135, 53°	
Paraxylene glycol	"	1.094, 135°	" "
Mesitylene glycol	$C_6H_3.CH_3.(CH_2OH)_2$	1.23, 15°	Robinet and Colson. C. R. 96, 1863.

23d. Aromatic Oxides.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Phenyl ether	$C_6H_5.O.C_6H_5$	1.0904	Gladstone and Tribe. J. C. S. 41, 6.
" "	"	1.0744, 24°	Gladstone. Bei. 9, 249.
" "	"	1.0712, 25°	
Phenyl methyl oxide. Anisol.	$C_6H_5.O.CH_3$	.991, 15°	Cahours. J. 2, 403.
" " " "	"	.8607, 155°	Schiff. G. C. I. 13, 177.
" " " "	"	.8608, 155°	
" " " "	"	.98784, 21°.8	Nasini and Bernheimer. G. C. I. 15, 50.
" " " "	"	1.0110, 0°	Pinette. A.C.P. 243, 82.
" " " "	"	.8604, 154°.8	
Phenyl ethyl oxide. Phenetol.	$C_6H_5.O.C_2H_5$	.8196, 171°.5	Schiff. G. C. I. 13, 177.
" " " "	"	.8198, 171°.5	
" " " "	"	.973, 15°	Remsen and Orndorff. A. C. J. 9, 393.

Name.	Formula.	Sp. Gravity.	Authority.
Phenyl ethyl oxide. Phenetol.	$C_6H_5.O.C_2H_5$	.9822, 0°	Pinette. A.C.P. 243, 82.
" " "	"	.8169, 170°.8	
Phenyl propyl oxide	$C_6H_5.O.C_3H_7$	.968, 20°	Cahours. Les Mondes, 32, 280.
" " "	"	.9639, 0°	Pinette. A.C.P. 243, 82.
" " "	"	.7889, 190°.5	
Phenyl isopropyl oxide	"	.958, 0°	Silva. Z. C. 13, 250.
" " "	"	.947, 12°.5	
Phenyl butyl oxide	$C_6H_5.O.C_4H_9$	.9500, 0°	Pinette. A.C.P. 243, 82.
" " "	"	.7664, 210°.8	
Phenyl isobutyl oxide	"	.9388, 16°	Riess. J. C. S. 24, 221.
Phenyl n. heptyl oxide	$C_6H_5.O.C_7H_{15}$	.9319, 0°	Pinette. A.C.P. 243, 82.
" " "	"	.7075, 266°.8	
Phenyl n. octyl oxide	$C_6H_5.O.C_8H_{17}$	.9221, 0°	" "
" " "	"	.6941, 282°.8	
Benzyl ether	$C_7H_7.O.C_7H_7$	1.0359, 16°	Lowe. J. C. S. 51, 701.
Kresyl ether	"	1.0352, 16°	Gladstone. Bei. 9, 249.
Orthokresyl methyl oxide	$C_7H_7.O.CH_3$	.9957, 0°	Pinette. A. C. P. 243, 82.
" " "	"	.8381, 171°.3	
Metakresyl methyl oxide	"	.9891, 0°	" "
" " "	"	.8255, 177°.2	
Parakresyl methyl oxide	"	.8236, 175°.5	Schiff. Bei. 9, 559.
" " "	"	.9868, 0°	Pinette. A. C. P. 243, 82.
" " "	"	.8241, 175°	
Orthokresyl ethyl oxide	$C_7H_7.O.C_2H_5$	.9679, 0°	" "
" " "	"	.7941, 184°.8	
Metakresyl ethyl oxide	"	.97123, 5°	Staedel. Ber. 14, 898.
" " "	"	.9650, 0°	Pinette. A. C. P. 243, 32.
" " "	"	.7888, 192°	
Parakresyl ethyl oxide	"	.8744, 0°	Fuchs. J. 22, 457.
" " "	"	.9662, 0°	Pinette. A. C. P. 243, 32.
" " "	"	.7884, 189°.9	
Orthokresyl propyl oxide	$C_7H_7.O.C_3H_7$	.9517, 0°	" "
" " "	"	.7675, 204°.1	
Metakresyl propyl oxide	"	.9484, 0°	" "
" " "	"	.7628, 210°.6	
Parakresyl propyl oxide	"	.9497, 0°	" "
" " "	"	.7635, 210°.4	
Orthokresyl butyl oxide	$C_7H_7.O.C_4H_9$	.9437, 0°	" "
" " "	"	.7493, 228°	
Metakresyl butyl oxide	"	.9407, 0°	" "
" " "	"	.7422, 229°.2	
Parakresyl butyl oxide	"	.9419, 0°	" "
" " "	"	.7410, 229°.5	
Orthokresyl n. heptyl oxide	$C_7H_7.O.C_7H_{15}$	.9243, 0°	" "
" " "	"	.7016, 277°.5	
Metakresyl n. heptyl oxide	"	.9202, 0°	" "
" " "	"	.6927, 283°.2	
Parakresyl n. heptyl oxide	"	.9228, 0°	" "
" " "	"	.6905, 283°.3	
Orthokresyl n. octyl oxide	$C_7H_7.O.C_8H_{17}$	.9231, 0°	" "
" " "	"	.6905, 292°.9	
Metakresyl n. octyl oxide	"	.9194, 0°	" "
" " "	"	.6818, 298°.9	

Name.	Formula.	Sp. Gravity.	Authority.
Parakresyl n. octyl oxide	$C_7H_7.O.C_8H_{17}$	.9199, 0°	Pinette. A. C. P. 248, 82.
" " "	"	.6808, 298°	
Ethyl phenetol	$C_6H_4.C_2H_5.O.C_2H_5$	.986, 14°	Auer. Ber. 17, 669.
Phloryl ethyl oxide	$C_8H_9.O.C_2H_5$	.9823, 18°	Sigel. A. C. P. 170, 345.
Styrolyl ethyl oxide	"	.931, 21°.9	Thorpe. J. 22, 412.
Orthopropylphenyl methyl oxide.	$C_6H_4.C_3H_7.O.CH_3$	.9694, 0°	Spica. Ber. 12, 295.
"	"	.9168, 100°	
Parapropylphenyl methyl oxide.	"	.9686, 0°	" "
" "	"	.9125, 100°	
Isopropylphenyl methyl oxide.	"	.962, 0°	Paterno and Spica. Ber. 10, 84.
Isopropylphenyl ethyl oxide.	$C_6H_4.C_3H_7.O.C_2H_5$	.94377, 0°	Spica. J. C. S. 38, 167.
" " "	"	.86369, 100°	
Orthoisopropylphenyl ethyl oxide.	"	.94438, 0°	Fileti. G. C. I. 16, 113.
" "	"	.85913, 100°	
Butyl anisol	$C_6H_4.C_4H_9.O.CH_3$	.9368, 27°	Studer. Ber. 14, 2187.
Methyl thymol	$C_{10}H_{13}.O.CH_3$	.941, 18°	Engelhardt and Latschinoff. J. 22, 466.
" "	"	.953898, 0°	Two samples. Pisati and Paterno. Ber. 8, 71.
" "	"	.869281, 100°	
" "	"	.954314, 0°	
" "	"	.870459, 100°	
" "	"	.9531, 0°	Pinette. A. C. P. 243, 82.
" "	"	.7635, 216°.2	
Ethyl thymol	$C_{10}H_{13}.O.C_2H_5$	.93866, 0°	Spica. J. C. S. 44, 460.
" "	"	.85758, 100°	
" "	"	.9834, 0°	Pinette. A. C. P. 248, 82.
" "	"	.7400, 226°.9	
Propyl thymol	$C_{10}H_{13}.O.C_3H_7$	.9276, 0°	" "
" "	"	.7215, 243°	
Butyl thymol	$C_{10}H_{13}.O.C_4H_9$	.9230, 0°	" "
" "	"	.7108, 258°.8	
Normal heptyl thymol	$C_{10}H_{13}.O.C_7H_{15}$	.9097, 0°	" "
" " "	"	.6712, 306°.7	
Normal octyl thymol	$C_{10}H_{13}.O.C_8H_{17}$	.9026, 0°	" "
" " "	"	.6608, 319°.8	
Metaxylyl ethyl oxide	$C_6H_4.CH_3.CH_2.O.C_2H_5$.	.9302, 17°	Radziszewski and Wispek. Ber. 15, 1746.
Paraxylyl ethyl oxide	"	.9304, 17°	Radziszewski and Wispek. Ber. 15, 1745.
Diphenylcarbyl ethyl oxide.	$(C_6H_5)_2CH.O.C_2H_5$	1.029, 20°	Linnemann.
Benzyl anisol	$C_6H_4.C_7H_7.O.CH_3$	1.073, 0°	Paterno. B. S. C. 18, 77.
" "	"	.993, 100°	
Phenylvinyl ethyl oxide	$C_{10}H_{12}O$	.9812, 0°	Erlenmeyer. Ber. 14, 1868.
Orthovinylanisöil	$C_6H_4.C_2H_3.O.CH_3$	1.0095, 15°	Perkin. J. C. S. 33, 211.
"	"	1.000, 30°	
Paravinylanisöil	"	1.002, 15°	" "
"	"	.9956, 30°	
Orthoallylanisöil	$C_6H_4.C_3H_5.O.CH_3$	.9972, 15°	" "
"	"	.9884, 30°	
"	"	.9798, 45°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Anethol. 1.4	$C_6H_4.C_3H_5.O.CH_3$	.984, 20°	Landolph. C. R. 82, 227.
" Natural	"	.9858, 30°	Perkin.
" Artificial	"	.9852, 30°	Perkin.
" "	"	.9761, 45°	Perkin.
"	"	.9887, 21°.3	Schiff. A. C. P. 223, 247.
"	"	.99132, 14°.9	Nasini and Bernheimer. G.C.I. 15, 50.
"	"	.98556, 21°.6	Nasini and Bernheimer. G.C.I. 15, 50.
"	"	.97595, 34°.4	Nasini and Bernheimer. G.C.I. 15, 50.
"	"	.94041, 77°.3	Nasini and Bernheimer. G.C.I. 15, 50.
"	"	.9869, 21°	Gladstone. J.C.S. 49, 623.
" Artificial	"	.9870, 21°	Gladstone. J.C.S. 49, 623.
Orthobutenylanisöil	$C_6H_4.C_4H_7.O.CH_3$	.9817, 15°	Perkin. J. C. S. 33, 211.
"	"	.9740, 30°	Perkin. J. C. S. 33, 211.
Parabutenylanisöil	"	.9733, 30°	" "
Phenyl allyl oxide	$C_6H_5.O.C_3H_5$	.9825, 17°.6	Nasini. Bei. 9, 331.
Kresyl allyl oxide. 1.4	$C_7H_7.O.C_3H_5$	.9869, 10°	" "
Phenyl propargyl oxide	$C_6H_5.O.C_3H_3$	1.246, 0°	Henry. Ber. 16, 1878.
Veratrol. 1.2	$C_6H_4(OCH_3)_2$	1.086, 15°	Merck. J. 11, 256.
Dimethylresorcin. 1.3	"	1.075, 0°	Coninck. Ber. 13, 1992.
"	"	1.0803, 0°	Schiff. Ber. 19, 560.
"	"	1.0317, 55°.8	Schiff. Ber. 19, 560.
"	"	1.0104, 79°.2	Schiff. Ber. 19, 560.
"	"	.9566, 135°.5	Schiff. Ber. 19, 560.
"	"	.8752, 215°	Schiff. Ber. 19, 560.
Methylene diphenate	$CH_2(OC_6H_5)_2$	1.1136, 18°	Henry. Ann. (5), 30, 269.
" "	"	1.092, 20°	Arnhold. A. C. P. 240, 192.
Methylene diorthokresylate.	$CH_2(OC_7H_7)_2$	1.019, 50°, l.	" "
Methylene dimetakresylate.	"	1.052, 50°, l.	" "
Methylene diparakresylate	"	1.034, 50°, l.	" "
Methylene dibenzylate	"	1.053, 20°	" "
Methylene dithymylate	$CH_2(OC_{10}H_{13})_2$	.979, 50°, l.	" "
Ethylene diphenate	$C_2H_4(OC_6H_5)_2$	1.018, 11°	Henry. Ber. 16, 1878.

24th. Aromatic Acids and their Paraffin Ethers.

Name.	Formula.	Sp. Gravity.	Authority.
Benzoic acid	$C_6H_5.COOH$	1.29, cryst.	Kopp.
" "	"	1.201, 21°, s.	Mendelejeff. J. 11, 274.
" "	"	1.206, 25°.8, l.	
" "	"	1.227, 27°, l.	
" "	"	1.0838, 121°.4	Kopp. J. 8, 35.
" "	"	1.337, sublimed	Rüdorff. Ber. 12, 251.
" "	"	1.288, 4°	Schröder. Ber. 12, 561.
" "	"	1.291, 4°	
" "	"	1.297, 4°	
" "	"	1.0800, 121°.4	Schiff. A. C. P. 223, 247.
Methyl benzoate	$C_8H_8O_2$	1.10, 17°	Dumas and Peligot. Ann. (2), 58, 50.
" "	"	1.1026, 0°	Kopp. A. C. P. 94, 257.
" "	"	1.0876, 16°.3	
" "	"	1.0921, 12°.8	Mendelejeff. J. 13, 7.
" "	"	1.0862, 20°	Brühl. Bei. 4, 782.
" "	"	1.100, 10°	De Heen. Bei. 10, 313.
" "	"	1.103, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.
Ethyl benzoate	$C_9H_{10}O_2$	1.0539, 10°.5	Dumas and Boullay. P. A. 12, 430.
" "	"	1.06, 18°	Deville. Ann. (3), 3, 188.
" "	"	1.049, 14°	Delffs. J. 7, 26.
" "	"	1.0657, 0°	Kopp. A. C. P. 94, 257.
" "	"	1.0556, 10°.5	
" "	"	1.0517, 14°.1	Mendelejeff. J. 13, 7.
" "	"	1.048, 20°	Naumann. Ber. 10, 2016.
" "	"	1.0478, 20°	Brühl. Bei. 4, 782.
" "	"	1.0502, 16°	Linnemann. A. C. P. 160, 195.
" "	"	1.160, 10°	De Heen. Bei. 10, 313.
" "	"	1.050, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.
Propyl benzoate	$C_{10}H_{12}O_2$	1.0316, 16°	Linnemann. A. C. P. 161, 29.
" "	"	1.0248, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.
Isopropyl benzoate	"	1.054, 0°	Silva. Z. C. 12, 637.
" "	"	1.013, 25°	
Butyl benzoate	$C_{11}H_{14}O_2$	1.000, 20°	Linnemann. Ann. (4), 27, 268.
" "	"	1.002, 10°	De Heen. Bei. 10, 313.
Isobutyl benzoate	"	1.0018, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Amyl benzoate	$C_{12}H_{16}O_2$	1.0039, 0°	Kopp. A. C. P. 94, 257.
" "	"	.9925, 14°.4	
" "	"	1.002, 10°	De Heen. Bei. 10, 313.
" "	"	.9916, 15°	Stohmann, Rodatz, and Herzberg. J. P. C. (2), 36, 1.
Hexyl benzoate	$C_{13}H_{18}O_2$	.99846, 17°	Frentzel. Ber. 16, 745.
Salicylic acid	$C_6H_4.OH.COOH$. 1.2	1.443	Rüdorff. Ber. 12, 251.
" "	"	1.482 4°	Schröder. Ber. 12, 1611.
" "	"	1.485 4°	
Metaoxybenzoic acid	" 1.3	1.473, 4°	" "
Paraoxybenzoic acid	" 1.4	1.460 4°	" "
" "	"	1.476 4°	
Methyl salicylate, oil of Betula lenta.	$C_8H_8O_3$	1.180, 15°	Pettigrew. Am. J. P. 55, 385.
Propyl salicylate	$C_{10}H_{12}O_3$	1.021, 21°	Cahours. Les Mondes, 32, 280.
Methylsalicylic acid. 1.2	$C_6H_4.OCH_3.COOH$	1.18, 10°	Cahours. Ann. (3), 10, 327.
" "	"	1.1845, 15°	Mendelejeff. J. 13, 7.
" "	"	1.1969, 0°	Kopp. A. C. P. 94, 257.
" "	"	1.1819, 16°	
" "	"	1.1801, 20°	Landolt. Bei. 7, 847
Anisic acid. 1.4	"	1.364 4°	Schröder. Ber. 12, 1611.
" "	"	1.376 4°	
" "	"	1.385 4°	
Ethylsalicylic acid. 1.2	$C_6H_4.OC_2H_5.COOH$	1.097	Baly. J. C. S. 2, 28.
" "	"	1.1843, 10°	Delffs. J. 7, 26.
Ethyl ethylsalicylate	$C_{11}H_{14}O_3$	1.1005	Göttig. Ber. 9, 1473.
Ethyl ethylmetaoxybenzoate.	"	1.0875, 0°	Heintz. A. C. P. 153, 332.
"	"	1.0725, 20°	
Methyl isopropylsalicylate	"	1.062, 20°	Kraut. J. 22, 566.
Protocatechuic acid	$C_6H_3(OH)_2.COOH$	1.541 4°	Schröder. Ber. 12, 1611.
" "	"	1.542 4°	
Gallic acid	$C_6H_2(OH)_3.COOH$	1.685 4°	" "
" "	"	1.703 4°	
Phenylacetic, or alphatoluic acid.	$C_6H_5.CH_2.COOH$	1.3, solid	Möller and Strecker. J. 12, 299.
" "	"	1.0778, 83°	
" "	"	1.0334, 135°	
" "	"	1.220 4°	Schröder. Ber. 12, 1611.
" "	"	1.236 4°	
" "	"	1.0847, 76°.4	Schiff. A. C. P. 223, 247.
Methyl phenylacetate	$C_9H_{10}O_2$	1.044, 16°	Radziszewski. Z. C. 12, 358.
Ethyl phenylacetate	$C_{10}H_{12}O_2$	1.031	" "
Propyl phenylacetate	$C_{11}H_{14}O_2$	1.0142, 18°	Hodgkinson. J. C. S. 37, 483.
Phenylpropionic, or hydrocinnamic acid.	$C_6H_5.C_2H_4.COOH$	1.07115, 48°.7	Weger A. C. P. 221, 61.
"	"	.8780, 279°.8	
Methyl phenylpropionate	$C_{10}H_{12}O_2$	1.0455, 0°	Erlenmeyer. J. 19, 366.
" "	"	1.018, 49°	
" "	"	1.0473, 0°	Weger. A. C. P. 221, 61.
" "	"	.83824, 236°.6	

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl phenylpropionate	$C_{11}H_{14}O_2$	1.0343, 0°	Erlenmeyer. J. 19, 367.
" "	"	.9925, 49°	
" "	"	1.0147, 20	Brühl. Bei. 4, 781.
" "	"	1.0348, 0°	Weger. A. C. P. 221, 61.
" "	"	.80182, 248°.1	
Propyl phenylpropionate	$C_{12}H_{16}O_2$	1.0152, 0°	" "
" "	"	.77886, 262°.1	
Amyl phenylpropionate	$C_{14}H_{20}O_2$	.9807, 0°	Erlenmeyer. J. 19, 367.
" "	"	.9520, 49°	
Methyl oxyphenylacetate	$C_9H_{10}O_3$	1.15, 17°.5	Fritzsche. Ber. 12, 2178.
Ethyl oxyphenylacetate	$C_{10}H_{12}O_3$	1.104, 17°.5	" "
Ethyl oxyphenylpropionate.	$C_{11}H_{14}O_3$	1.360, 17°.5	Saarbach. J. P. C. (2), 21, 156.
Phthalic acid	$C_6H_4.(COOH)_2$	1.585	Schröder. Ber. 13, 1070.
" "	"	1.593	
Methyl phthalate	$C_{10}H_{10}O_4$	1.2001 13°.5	Three preparations. Schmalzigaug. Inaug. Diss. Erlangen, 1883. See also Graebe, Ber. 16, 861.
" "	"	1.2022 13°.5	
" "	"	1.2101 13°.5	
" "	"	1.1958 16°	
" "	"	1.1974 16°	
" "	"	1.2058 16°	
" "	"	1.1953 18°	
" "	"	1.1938 18°	
" "	"	1.2031 18°	
Ethyl phthalate	$C_{12}H_{14}O_4$	1.1316 12°.5	Two preparations. Schmalzigaug. Inaug. Diss. Erlangen, 1883.
" "	"	1.1321 12°.5	
" "	"	1.1294 15°.5	
" "	"	1.1295 15°.5	
Orthophenyleneglyoxylic acid.	$C_6H_4.COH.COOH$	1.404	Colson and Gautier. C. R. 102, 689.
Cinnamic, or phenylacrylic acid.	$C_6H_5.CH.CH.COOH$	1.245	E. Kopp. J. P. C. 37, 280.
" "	"	1.195	Schabus. J. 3, 392.
" "	"	1.246 4°	Schröder. Ber. 12, 1611.
" "	"	1.249 4°	
" "	"	1.0565, 133°	Weger. A. C. P. 221, 61.
" "	"	.90974, 300°	
Methyl cinnamate	$C_{10}H_{10}O_2$	1.106	E. Kopp. C. R. 21, 1376.
" "	"	1.0415, 36°	Weger. A. C. P. 221, 61.
" "	"	.85888, 259°.6	
Ethyl cinnamate	$C_{11}H_{12}O_2$	1.126, 0°	E. Kopp. C. R. 21, 1376.
" "	"	1.13	Marchand. A. C. P. 32, 269.
" "	"	1.0656, 0°	H. Kopp. A. C. P. 95, 307.
" "	"	1.0498, 20°.2	
" "	"	1.0653 0°	Weger. A.C.P. 221, 61.
" "	"	1.0658 0°	
" "	"	1.0662 0°	
" "	"	.82143, 271°	
" "	"	1.0490, 20°	Brühl. A.C.P. 235, 1.
Propyl cinnamate	$C_{12}H_{14}O_2$	1.0465	Kahlbaum. Ber. 16, 1491.
" "		1.0435, 0°	Weger. A.C.P. 221, 61.
" "	"	.7917, 285°.1	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl α methylorthoxyphenylacrylate.	$C_{11}H_{11}O_3$	1.1404, 15°	Perkin. J. C. S. 39, 409.
	"	1.1277, 30°	
" "	"	1.1465, 8°.5	Gladstone. Bei. 9, 249.
Methyl β methylorthoxyphenylacrylate.	"	1.1486, 15°	Perkin. J. C. S. 39, 409.
	"	1.1362, 30°	
" "	"	1.1556, 9°.5	Gladstone. Bei. 9, 249.
Ethyl α ethylorthoxyphenylacrylate.	$C_{13}H_{16}O_3$	1.084, 15°	Perkin. J. C. S. 39, 409.
	"	1.074, 30°	
Ethyl β ethylorthoxyphenylacrylate.	"	1.090, 15°	" "
	"	1.090, 10°	Gladstone. Bei. 9, 249.
Methyl α methylorthoxyphenylcrotonate.	$C_{12}H_{14}O_3$	1.1112, 15°	Perkin. J. C. S. 39, 409.
	"	1.1061, 30°	
Methyl β methylorthoxyphenylcrotonate.	"	1.1279, 15°	" "
	"	1.1136, 30°	
Methyl α methylorthoxyphenylangelate.	$C_{13}H_{16}O_3$	1.1044, 15°	" "
	"	1.0882, 30°	
Methyl β methylorthoxyphenylangelate.	"	1.1100, 15°	" "
	"	1.1008, 30°	
Mandelic acid	$C_6H_5.CHOH.COOH$	1.355, 4°	Schröder. Ber. 12, 1611.
" "	"	1.367, 4°	
Cuminic acid	$C_6H_4.C_3H_7.COOH$	1.156, 4°	" "
" "	"	1.169, 4°	
Quinic acid	$C_7H_{12}O_6$	1.637, 8°.5	Watts' Dictionary.
Ethyl veratrate	$C_{11}H_{14}O_4$	1.141, 18°	Will. A. C. P. 37, 198.
Ethyl phenylglyoxylate	$C_{10}H_{10}O_3$	1.121, 17°.5	Claisen. Ber. 12, 629.
Ethyl phenylacetacetate	$C_{12}H_{14}O_3$	1.0861, 16°	Hodgkinson. J. C. S. 37, 481.
Ethyl benzylacetacetate	$C_{13}H_{16}O_3$	1.036, 15°.5	Conrad. Ber. 11, 1056.
Ethyl methylbenzylacetacetate.	$C_{14}H_{18}O_3$	1.046, 23°	" "
Ethyl benzylmalonate	$C_{14}H_{18}O_4$	1.077, 15°	Conrad and Bischoff. A. C. P. 204, 203.
Ethyl benzylmethylmalonate.	$C_{15}H_{20}O_4$	1.064, 19°	Conrad and Bischoff. Ber. 13, 595.
Ethyl benzylidenemalonate.	$C_{14}H_{16}O_4$	1.1105, 15°	Claisen and Crismer. A. C. P. 218, 132.
Ethyl benzylacetosuccinate.	$C_{17}H_{22}O_5$	1.088, 15°	Conrad. Ber. 11, 1058.
Monomethyl propylpyrogallate. Picamar.	$C_{10}H_{14}O_3$	1.10	Reichenbach.
	"	1.10288, 15°	Pastrovich. M. C. 4, 183.

25th. Ethers of Aromatic Radicles.

Name.	Formula.	Sp. Gravity.	Authority.
Phenyl acetate	$C_8 H_8 O_2$	1.074	Boughton. J. 18, 530.
Kresyl acetate	$C_9 H_{10} O_2$	1.0499, 23°	Gladstone. Bei. 9, 249.
Benzyl acetate	"	1.057, 16°.5	Conrad and Hodgkinson. A. C. P. 193, 312.
" "	"	1.0400, 21°	Gladstone. Bei. 9, 249.
" "	"	1.03814, 22°.5	
Paraxylyl acetate	$C_{10} H_{12} O_2$	1.0264, 15°	Jacobsen. Ber. 11, 28.
Ethylphenyl acetate	"	1.0286	Radziszewski. Ber. 9, 873.
" "	"	1.0507, 22°.5	Gladstone. Bei. 9, 249.
Methylphenylcarbyl acetate.	"	1.05, 17°	Radziszewski. C. C. 5, 261.
Parapropylphenyl acetate	$C_{11} H_{14} O_2$	1.029, 0°	Spica. Ber. 12, 295.
" "	"	.9425, 100°	
Orthoisopropylphenyl acetate.	"	1.02714, 0°	Fileti. G. C. I. 16, 113.
" "	"	.93818, 100°	
Paraisopropylphenyl acetate.	"	1.026, 0°	Paterno and Spica. Ber. 10, 84.
Mesityl acetate	"	1.0903, 16°.5	Wispek. Ber. 16, 1577.
Thymyl acetate	$C_{12} H_{16} O_2$	1.009, 0°	Two preparations. Paterno. J. C. S. (2), 13, 638.
" "	"	.924, 100°	
" "	"	1.010, 0°	
Butylphenyl acetate	"	.999, 24°	Studer. Ber. 14, 2187.
Diphenylcarbyl acetate	$C_{15} H_{14} O_2$	1.49, 22° ?	Linnemann. A. C. P. 133, 20.
Benzyl propionate	$C_{10} H_{12} O_2$	1.036, 16°.5	Conrad and Hodgkinson. A. C. P. 193, 312.
Benzyl butyrate	$C_{11} H_{14} O_2$	1.016, 16°	" "
Benzyl isobutyrate	"	1.016, 18°	Hodgkinson. A. C. P. 193, 320.
" "	"	1.0058, 23°	Gladstone. Bei. 9, 249.
Isomer of benzyl isobutyrate.	"	1.0228, 22°	" "
Benzyl phenylacetate	$C_{15} H_{14} O_2$	1.101	Slawik. J. C. S. (2), 13, 59.
Benzyl benzylacetate	$C_{16} H_{16} O_2$	1.074, 21°	Conrad and Hodgkinson. A. C. P. 193, 312.
Benzyl benzylpropionate	$C_{17} H_{18} O_2$	1.046, 16°.5	" "
Benzyl benzylbutyrate	$C_{18} H_{20} O_2$	1.027, 17°.5	" "
Benzyl benzylisobutyrate	"	1.028, 18°	" "
Benzyl dimethylbenzylacetate.	"	1.0285, 18°	Hodgkinson. J. C. S. 33, 495.
Benzyl benzoate	$C_{14} H_{12} O_2$	1.114, 18°.5	Kraut. A. C. P. 152, 159.
" "	"	1.1224, 19°, l.	Claisen. Ber. 20, 646.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzyl cinnamate	$C_{16}H_{14}O_2$	1.098, 14°	Scharling. J. 9, 680.
" "	"	1.1145, 16°	Busse. Ber. 9, 831.
Cinnamic acetate	$C_{11}H_{12}O_2$	.9416, 22°	Gladstone. Bei. 9, 249.
Mesitylene diacetate	$C_{13}H_{16}O_4$	1.12, 20°	Robinet and Colson. C. R. 96, 1863.
Ethyl phenyl carbonate	$C_9H_{10}O_3$	1.117, 0°	Fatianoff. J. 17, 477.
" " "	"	1.1134, 0°	Pawlewski. Ber. 17, 1205.

26th. Aromatic Aldehydes.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Benzaldehyde. Almond oil.	$C_6H_5.COH$	1.075	Chardin-Hardancourt.
"	"	1.038, 15°	Guckelberger. J. 1. 850.
"	"	1.043	Wöhler and Liebig.
"	"	1.0636, 0°	Kopp. A. C. P. 94, 257.
"	"	1.0499, 14°.6	
"	"	1.0504	Mendelejeff. J. 13, 7.
"	"	1.067	Lippmann and Hawliczek. Ber. 9, 1461.
"	"	1.0471 20°	Landolt.
"	"	1.0474	
"	"	1.0455, 20°	Brühl. Bei. 4, 782.
Toluic aldehyde	$C_6H_4CH_3.COH$	1.037, 0°	Gundelach. B. S. C. 26, 45.
" "	"	1.024, 22°	
Phenylacetic aldehyde	"	1.085	Radziszewski. Ber. 9, 372.
Cuminic aldehyde. Cuminol.	$C_6H_4.C_3H_7.COH$	.9832, 0°	Kopp. A. C. P. 94, 257.
" "	"	.9727, 13°.4	
" "	"	.9751, 15°	Mendelejeff. J. 13, 7.
" "	"	.9775, 20°	Gladstone. Bei. 9, 249.
Paratolylpropyl aldehyde	$C_6H_4.CH_3.CH_2.CH_2.COH$	.9941, 18°	v. Richter and Schüchner. Ber. 17, 1931.
Salicylic aldehyde, or salicylol.	$C_6H_4.OH.COH$	1.1731, 18°.8	Piria. A. C. P. 29, 300.
" "	"	1.1671, 20°	Landolt. Bei. 7, 847.
Anisic aldehyde	$C_6H_4.OCH_3.COH$	1.09, 20°	Cahours. Ann. (3), 14, 484.
" "	"	1.1228, 18°	Rossel. Z. C. 12, 561.
Cinnamic aldehyde	C_9H_8O	1.0497, 20°	Brühl. A. C. P. 235, 1.

27th. Aromatic Ketones.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl phenyl ketone	$C_6 H_5 . CO . CH_3$	1.032, 15°	Friedel. J. 10, 270.
Methyl benzyl ketone	$C_7 H_7 . CO . CH_3$	1.010, 13°	Radziszewski. Ber. 3, 199.
Methyl tolyl ketone	"	.9891, 22°	Essner and Gossin. Ber. 17, ref. 429.
Propyl phenyl ketone	$C_6 H_5 . CO . C_3 H_7$	.990, 15°	Schmidt and Fieberg. J. C. S. (2), 12, 75.
" " "	"	.992, 15°	Popoff. Ber. 6, 560.
" " "	"	.9949, 15°	Einhorn. In. Diss. Tübingen, 1880.
Isopropyl phenyl ketone	"	.994, 12°	" "
" " "	"	.972, 30°	" "
" " "	"	.934, 60°	" "
Methyl xylyl ketone	$C_8 H_9 . CO . CH_3$	.9962, 19°	Claus and Wollner. Ber. 18, 1856.
Isobutyl phenyl ketone	$C_6 H_5 . CO . C_4 H_9$	.998, 17°.5	Popoff. A.C.P. 162, 151.
Tolyl phenyl ketone	$C_6 H_5 . CO . C_7 H_7$	1.088, 17°.5	Senff. A. C. P. 220, 252.
Acetocinnamone	$C_8 H_7 . CO . CH_3$	1.008	Engler and Leist. B. S. C. 20, 204.
Propionylacetophenone	$C_{11} H_{12} O_2$	1.081, 15°	Stylos. Ber. 20, 2181.
Butyrylacetophenone	$C_{12} H_{14} O_2$	1.061, 15°	" "

28th. Camphors, Essential Oils, Etc.

Name.	Formula.	Sp. Gravity.	Authority.
Laurel camphor	$C_{10} H_{16} O$	.986	Watts' Dictionary.
" "	"	.996	Watts' Dictionary.
Myristicol	"	.9466, 20°	Gladstone. J. C. S. (2), 10, 1.
Absinthol	"	.973, 24°	Leblanc. A. C. P. 56, 357.
"	"	.9267, 20°	Gladstone. J. C. S. (2), 10, 1.
"	"	.9128, 22°	Gladstone. Bei. 9, 249.
Citronellol	"	.8742, 20°	Two samples Gladstone. J. C. S. (2), 10, 1.
"	"	.875, 20°	Two samples Gladstone. J. C. S. (2), 10, 1.
From oil of coriander	"	.8970	Grosser. Ber. 14, 2505.
Ericinol	"	.874, 20°	Frohde. J. P. C. 82, 186.
Oil of Mentha pulegium	"	.9271	Watts' Dictionary.
" " "	"	.9890	Watts' Dictionary.

Name.	Formula.	Sp. Gravity.	Authority.
Oil of Pulegium micranthum.	$C_{10}H_{16}O$	.932, 17°	Butlerow. J. 7, 595.
From oil of tansy	"	.918, 4°	Bruylants. Ber. 11, 451.
Thujol	"	.924, 15°	Jahns. Ber. 16, 2930.
Cajeputol	$C_{10}H_{18}O$	.9160, 20°	Gladstone. J. C. S. (2), 10, 1.
"	"	.8900, 21°.5	" "
Cajeputene hydrate	"	.903, 17°	Schmidl. J. 13, 480.
" "	"	.9160, 20°	Kanonnikoff. Bei. 7, 592.
Oil of coriander	"	.871, 14°	Kawalier. J. 5, 624.
" "	"	.8719, 15°	Grosser. Ber. 14, 2486.
Cyneol	"	.92067, 16°	Wallach and Brass. A. C. P. 225, 291.
"	"	.9267, 20°	Wallach. A. C. P. 245, 195.
Oil of eucalyptus oleosa	"	.9075, 20°	Gladstone. J. C. S. (2), 10, 1.
Geraniol	"	.8851, 15°	Jacobsen. Z. C. 14, 171.
"	"	.8813, 21°	
Oil of Licari kanali	"	.868, 15°	Morin. J. C. S. 40, 738.
Oil of Melaleuca ericifolia	"	.8960, 20°	Gladstone. J. C. S. (2), 10, 1.
Oil of Melaleuca linarifolia	"	.8985, 20°	" "
From menthol	"	.9032	Moriya. C. N. 42, 268.
Menthone	"	.9126, 0°	Atkinson and Yoshida. J. C. S. 41, 295.
"	"	.9048, 10°	
"	"	.8972, 20°	
"	"	.8819, 40°	
"	"	.8665, 60°	
"	"	.8511, 80°	
"	"	.8355, 100°	
Ngai camphor	"	1.02	Plowman. J. C. S. (2), 12, 582.
From Osmitopsis asteriscoides.	"	.921	Gorup-Besanez. J. 7, 596.
Salviol	"	.934, 15°	Sigiura and Muir. J. C. S. 33, 295.
"	"	.938, 15°	Muir. J. C. S. 37, 18.
Terpane	"	.935, 0°	Bouchardat and Voiry. C. R. 106, 664.
Terpilenol	"	.961, 0°	Bouchardat and Lafont. B. S. C. 45, 295.
"	"	.950, 15°	
"	"	.9533, 0°	Lafont. B. S. C. 49, 323.
Terpinol*	"	.952, 0°	Bouchardat and Voiry. B.S.C. 47, 870.
"	"	.9296, 10°	Gladstone. J. C. S. 49, 623.

* List's terpinol (J. 1, 726) is now known to be a mixture.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Terpinol	$C_{10}H_{18}O$	.9357, 20°	Wallach. A. C. P. 245, 196.
Turpentine hydrate	"	.9274, 16°	Tilden. C. N. 37, 166.
" "	"	.9339, 0°	Flawitzky. Ber. 12, 2355.
" "	"	.9201, 18°	
" "	"	.9511, 10°	Renard. Ber. 13, 932.
" "	"	.9188	Kanonnikoff. Bei. 7, 592.
" "	"	.9335, 0°	Flawitzky. Ber. 20, 1959.
" "	"	.9189, 19°.5	
From wormseed oil	"	.9275, 16°	Hell and Stürcke. Ber. 17, 1970.
" " "	"	.8981, 50°	
" " "	"	.8558, 100°	
Menthol	$C_{10}H_{20}O$	.9394 20°	Two samples. Gladstone. J. C. S. (2), 10, 1.
"	"	.9515 20°	
"	"	.89, 15°	Moriya. C. N. 42, 268.
"	"	.8786, 20°	Kanonnikoff. Bei. 7, 592.
Ethyl camphor	$C_{12}H_{20}O$	.946, 22°	Baubigny. J. 19, 624.
Eucalyptol	"	.905, 8°	Cloëz. Z. C. 12, 411.
"	"	.9178, 15°	Poehl. J. R. C. 5, 538.
From wormseed oil	"	.919, 20°	Völckel. J. 6, 518.
Amyl camphor	$C_{15}H_{26}O$	.919, 15°	Baubigny.
Acetyl camphor	$C_{12}H_{18}O_2$	.986, 20°	Baubigny. J. 19, 624.
Methyl borneol	$C_{11}H_{20}O$	.933, 15°	Baubigny.
Ethyl borneol	$C_{12}H_{22}O$	.916, 23°	"
From Achillea ageratum	"	.849, 20°	De Luca. J. C. S. 31, 326.
From Angostura bark	$C_{13}H_{24}O$	.934	Herzog. J. 11, 444.
Patchouli camphor	$C_{15}H_{28}O$	1.051, 4°.5	Gal. Z. C. 12, 220.
Oil of ginger	$C_{80}H_{138}O_5$. (?)	.893	Papousek. J. 5, 624.
Camphorogenol	$C_{10}H_{18}O_2$	.9794, 20°	Yoshida. J. C. S. 47, 779.
Terpilene formate	$C_{11}H_{18}O_2$	.9986, 0°	Two samples. Lafont. B. S. C. 49, 823.
" "	"	.9989	
Terpilene acetate	$C_{12}H_{20}O_2$	.9827, 0°	Bouchardat and Lafont. C. R. 102, 318.
Terebenthene acetate	"	.9820, 0°	" "
Terebene acetate	"	.977, 0°	Bouchardat and Lafont. C. R. 102, 171.
Camphene acetate	"	1.002, 0°	Lafont. C. R. 104, 1718.
Camphoric acid	$C_{10}H_{16}O_4$	1.191	Schröder. Ber. 13, 1070.
" "	"	1.195	
Ethylcamphoric acid	$C_{12}H_{20}O_4$	1.095, 20°.5	Malaguti. Ann. (2), 64, 164.
Ethyl camphorate	$C_{14}H_{24}O_4$	1.029, 16°	Malaguti. A. C. P. 22, 48.
" "	"	1.072, 22°	Dehmel. J. R. C. 4, 321.
" "	"	1.070, 25°	
Propyl camphorate	$C_{16}H_{28}O_4$	1.058, 24°	" "
Ethyl paracamphorate	$C_{14}H_{24}O_4$	1.03, 15°	Chautard. J. 16, 395.
Camphoric anhydride	$C_{10}H_{14}O_3$	1.194, 20°.5	Malaguti. Ann. (2), 64, 160.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl camphocarbonate	$C_{13}H_{20}O_3$	1.052, 15°	Roser. Ber. 18, 3112.
Camphrene	$C_8H_{12}O$	.974, 6°	Chautard. J. 10, 483.
Diethylcamphresic acid	$C_9H_{22}O_7$	1.128, 13°	Schwanert. J. 16, 397.
Ethyl camphresate	$C_{16}H_{26}O_7$	1.0775, 13°	" "

29th. Miscellaneous Compounds.

Name.	Formula.	Sp. Gravity.	Authority.
Quinone	$C_6H_4O_2$	1.307	Schröder. Ber. 13, 1070.
"	"	1.318	
Phlorol	$C_8H_{10}O$	1.015, 12°	Sigel. A. C. P. 170, 345.
Carvol	$C_{10}H_{14}O$	.953, 15°	Völckel.
"	"	.9530, 20°	Gladstone. J. C. S. (2), 10, 1.
"	"	.9562, 20°	" "
"	"	.959 20	Beyer. Ber. 16, 1387.
"	"	.9598 20	
"	"	.9598 20	
"	"	.960, 18°.5	Flückiger.
"	"	.7866, 228°	Schiff. Ber. 19, 560.
"	"	.9667, 11°	Gladstone. J. C. S. 49, 628.
Eugenol	$C_{10}H_{12}O_2$	1.076	Stenhouse. A. C. P. 95, 106.
"	"	1.0684, 14°	Williams. A. C. P. 107, 240.
"	"	1.066, 15°	Church. J. C. S. (2), 13, 113.
"	"	1.0778, 0°	Wassermann. J. C. S. (2), 1, 706.
"	"	1.063, 18°.5	
"	"	1.0703, 14°	Tiemann and Kraaz. Ber. 15, 2066.
"	"	1.066, 17°.5	Gladstone. Bei. 9, 249.
Isoeugenol	"	1.080, 16°	Tiemann and Kraaz. Ber. 15, 2066.
Methyl eugenol ?	$C_{11}H_{14}O_2$	1.046, 15°	Church. J. C. S. (2), 13, 115.
" "	"	1.055, 15°	Petersen. Ber. 21, 1060.
Ethyl eugenol	$C_{12}H_{16}O_2$	1.026, 0°	Wassermann. A. C. P. 179, 376.
" "	"	1,0117, 18°.5	
Propyl eugenol	$C_{13}H_{18}O_2$	1.0024, 16°	Wassermann. Ber. 10, 237.
Isobutyl eugenol	$C_{14}H_{20}O_2$	.985, 15°	" "
Amyl eugenol	$C_{15}H_{22}O_2$	.976, 16°	Wassermann. Ber. 10, 238.
Allyl eugenol	$C_{13}H_{16}O_2$	1.018, 15°	" "
Coumarin	$C_9H_6O_2$	.9207	Gladstone. Bei. 9, 249.

Name.	Formula.	Sp. Gravity.	Authority.
Safrol	$C_{10} H_{10} O_2$	1.1141, 0°	Grimaux and Ruotte. Z. C. 12, 411.
"	"	1.0956, 18°	J. Schiff. Ber. 17, 1935.
Coerulignol	$C_{10} H_{14} O_2$	1.05645, 15°	Pastrovich. M. C. 4, 189.
Phthalic anhydride	$C_8 H_4 O_3$	1.527 } 4°	Schröder. Ber. 12, 1611.
" "	"	1.530 } 4°	
Benzoic anhydride	$C_{14} H_{10} O_3$	1.231 } 4°	" "
" "	"	1.234 } 4°	
" "	"	1.247 } 4°	
Benzo-oenanthic anhydride.	$C_{14} H_{18} O_3$	1.043	Malerba. J. 7, 444.
Benzo-cinnamic anhydride.	$C_{16} H_{12} O_3$	1.184, 23°	Gerhardt. J. 5, 449.
Benzo-cuminic anhydride	$C_{17} H_{16} O_3$	1.115, 23°	Gerhardt. J. 5, 448.
Pyruvyl benzoate	$C_{10} H_{10} O_3$	1.143, 25°, s.	Romburgh. J. C. S. 44, 63.
Tannic acid	$C_{14} H_{10} O_9$	1.097	W. C. Smith. Am. J. P. 53, 145.
Benzoyl glycollic ether	$C_{11} H_{12} O_4$	1.1509, 20°.4	Andrieff. J. 18, 344.
Propylene ethylphenylketate.	$C_{12} H_{16} O_2$	.988, 22°	Morley and Green. Ber. 17, 3016.
Isomer of benzil	$C_{14} H_{10} O_2$	1.104. 10°	Alexeyeff. J. 17, 335.
Saliretin	$C_{14} H_{14} O_3$	1.1161, 25°	Beilstein and Seelheim. J. 14, 765.
Isobenzpinacone	$C_{26} H_{22} O_2$	1.10, 19°	Linnemann. J. 18, 556.
Derivative of propyl phenylacetate.	$C_{24} H_{20} O_3$	1.039, 17°	Hodgkinson. J. C. S. 37, 482.
Derivative of ethyl phenylacetacetate.	$C_{18} H_{20} O_2$	1.0628, 20°	" "
a Naphtol	$C_{10} H_8 O$	1.224, 4°	Schröder. Ber. 12, 1611.
"	"	1.09539, 98°.7	Nasini and Bernheimer. G. C. I. 15, 50.
β Naphtol	"	1.217, 4°	Schröder. Ber. 12, 1611.
"	"	1.23	Brügelmann. Ber. 17, 2359.
Naphtol	"	.9048, at boiling point.	Ramsay. J. C. S. 39, 65.
Methyl *a* naphtol	$C_{11} H_{10} O$	1.09636, 13°.9	Nasini and Bernheimer. G. C. I. 15, 50.
" "	"	1.07931, 84°.5	
" "	"	1.04661, 77°.7	
Propyl *a* naphtol	$C_{13} H_{14} O$	1.04471, 18°.4	" "
Methyl *a* naphtyl oxide	$C_{10} H_7 . O . C H_3$	1.0974, 15°	Staedel. Ber. 14, 898.
Methyl naphtyl ketone	$C_{10} H_7 . C O . C H_3$	1.124, 0°	Roux. Ann. (6), 12, 336.
Anthraquinone	$C_{14} H_8 O_2$	1.438	Schröder. Ber. 13, 1070.
"	"	1.426	
"	"	1.425	
"	"	1.419	
Phenanthrenequinone	"	1.404	" "
"	"	1.405	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Asarone	$C_{12}H_{16}O_3$	1.165, 18°	Butlerow and Rizza. B. S. C. 43, 114.
"	"	1.0743, 60°	
"	"	1.0655, 95°	
Salicin. Natural	$C_{13}H_{18}O_7$	1.4338, 26°	Piria. Ann. (3), 44, 368.
" Artificial	"	1.4257	
Santonin	$C_{15}H_{18}O_3$	1.247, 20°.5	Trommsdorf. A. C. P. 11, 190.
"	"	1.1866	Carnelutti and Nasini. Ber. 13, 2210.
Metasantonin. M. 136°	"	1.1649	" "
" " 160°.5	"	1.1975	
Santonid	"	1.1967	" "
Metasantonid	"	1.046	" "
Parasantonid	"	1.1957	" "
"	"	1.2015, 20°	Nasini. Ber. 14.1513.
Santonic acid	$C_{15}H_{20}O_4$	1.251	Carnelutti and Nasini. Ber. 13, 2210.
Parasantonic acid	"	1.2684	" "
Methyl santonate	$C_{16}H_{22}O_4$	1.1667	" "
Methyl parasantonate	"	1.1777	" "
Ethyl santonate	$C_{17}H_{24}O_4$	1.1481	" "
Ethyl parasantonate	"	1.153	" "
Propyl santonate	$C_{18}H_{26}O_4$	1.1185	" "
" "	"	1.125, 20°	Nasini. G. C. I. 13, 165.
Propyl parasantonate	"	1.153	Carnelutti and Nasini. Ber. 13, 2210.
Isobutyl santonate	$C_{19}H_{28}O_4$	1.1181	" "
Allyl santonate	$C_{18}H_{24}O_4$	1.1434	" "
Styracin	$C_{18}H_{16}O_2$	1.154	Schröder. Ber. 13, 1070.
"	"	1.159	
Pimaric acid	$C_{20}H_{30}O_2$	1.047, 18°	Siewert. J. 12, 510.
Sylvic acid	"	1.1011, 18°	" "
Tropilene	$C_7H_{10}O$	1.01, 0°	Ladenburg. Ber. 14, 2130.
"	"	1.0091, 0°	Ladenburg. A. C. P. 217, 139.
Cinaerol	$C_{10}H_{18}O_2$	1.05	Hirzel. Watts' Dictionary.
"	"	1.15	
Colophonone	$C_{11}H_{18}O$	.84	Schiel. J. 13, 489.
Apiol	$C_{12}H_{14}O_4$	1.015	Lindenborn. Ber. 9, 1478.
Calophyllum resin	$C_{14}H_{18}O_4$	1.12, cryst.	Levy. C. R. 18, 244.
Antiar resin	$C_{16}H_{24}O$	1.032	Mulder. A. C. P. 28, 307.
Tannin from Persea lingue	$C_{17}H_{17}O_9$	1.352, 10°	Arata. Ber. 14, 2251.
From Sequoia gigantea	$C_{18}H_{20}O_3$	1.045	Lunge and Steinkauler. Ber. 14, 2205.
Turmerol	$C_{19}H_{28}O$	.9016, 17°	Jackson and Menke. A. C. J. 4, 371.
Guyaquillite	$C_{20}H_{26}O_3$	1.092	Dana's Mineralogy.
Hartin	$C_{20}H_{34}O_2$	1.115, 19°	Schrötter. P. A. 59, 45.
Resin from rosewood	$C_{21}H_{21}O_6$	1.2662, 15°	Terreil and Wolff. J. C. S. 38, 559.
Cardol	$C_{21}H_{31}O_2$	.978, 23°	Städeler. J. 1, 577.

Name.	Formula.	Sp. Gravity.	Authority.
Ivaol	$C_{26} H_{40} O$	.9346, 15°	Planta-Reichenau. Z. C. 18, 618.
Cholesterin	$C_{26} H_{44} O$	1.03, melted	Hlasiwetz. A. C. P. 106, 354.
"	"	1.046 } 20°	Mehu. J. C. S. (2), 13, 247.
"	"	1.047 } 20°	
Waldivine	$C_{36} H_{48} O_{20}. 5 H_2 O$	1.46	Tanret. J. Ph. C. (5), 3, 61.
Cochlearin	$C_6 H_7 O_2$. ?	1.248	Maurach. Watts' Dictionary.
Aloïsol	$C_6 H_8 O_3$. ?	.877, 15°	Robiquet. Watts' Dictionary.
Xanthil	$C_4 H_{10} O_3$. ?	.894	Couërbe.
Picrolichenin	?	1.176	Alms. A. C. P. 1, 61.
Phycic acid	?	.896	Lamy. J. 5, 675.

XLVII. COMPOUNDS CONTAINING C, H, AND N.

1st. Cyanides and Carbamines of the Paraffin Series.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl cyanide, or acetonitril.	$C H_3. C N$	.8347, 0°	Kopp. A. C. P. 98, 367.
" " "	"	.8191, 16°	
" " "	"	.8052, 0°	Vincent and Delachanal. C. R. 90, 747.
" " "	"	.7155, 81°.2	Schiff. Bei. 9, 559.
Methyl carbamine	"	.7557, 14°	Gautier. Roscoe and Schorlemmer's Treatise.
Ethyl cyanide, or propionitril.	$C_2 H_5. C N$	.7017, 97°	Ramsay. J. C. S. 35, 463.
" " "	"	.80101, 0°	Thorpe. J. C. S. 37, 371.
" " "	"	.70098, 97°.08	
" " "	"	.7862, 19°	Gladstone. Bei. 9, 249.
" " "	"	.7015, 97°	Schiff. Bei. 9, 559.
Ethyl carbamine	"	.787, 15°	Pelouze. Watts' Dictionary.
" "	"	.7889, 12°.6	Frankland and Kolbe. J. 1, 552.
Propyl cyanide, or butyronitril.	$C_3 H_7. C N$	.795, 12°.5	Dumas. J. 1, 594.
Isopropyl carbamine	"	.7596, 0°	Gautier. B. S. C. 11, 224.
Butyl cyanide, or valeronitril.	$C_4 H_9. C N$	.8164, 0°	Lieben and Rossi. A. C. P. 158, 137.
Isobutyl cyanide, or isovaleronitril.	"	.810	Schlieper. A. C. P. 59, 15.
" " "	"	.813, 15°	Guckelberger. J. 1, 852.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isobutyl cyanide, or isovaleronitril.	$C_4 H_9 . C N$	.8226, 0°	Erlenmeyer and Hell. A. C. P. 160, 257.
" " "	"	.8146, 10°	
" " "	"	.8060, 20°	
" " "	"	.6921, 129°.8	Schiff. Bei. 9, 559.
" " "	"	.8010, 18°	Gladstone. Bei. 9, 249.
Isobutyl carbamine	"	.7878, 4°	Gautier. Z. C. 12, 415.
Isoamyl cyanide, or capronitril.	$C_5 H_{11} . C N$	.8061, 20°	Frankland and Kolbe. J. 1, 559.
" " "	"	.8040, 18°	Gladstone. Bei. 9, 249.
" " "	"	.6861, 154°	Schiff. Bei. 9, 559.
Oenanthonitril	$C_6 H_{13} . C N$	.895, 22°	Mehlis. A.C.P. 185, 368.
Heptyl cyanide	$C_7 H_{15} . C N$	.8201, 13°.3	Felletár. J. 21, 634.
Octyl cyanide	$C_8 H_{17} . C N$	.786, 16°	Eichler. Ber. 12, 1888.
Isoöctyl cyanide	"	.8187, 14°	Felletár. J. 21, 634.
Lauronitril	$C_{11} H_{23} . C N$	.8350, 0°	Krafft and Stauffer. Ber. 16, 1728.
"	"	.8273, 15°	
"	"	.7675, 98°.9	
Myristonitril	$C_{13} H_{27} . C N$	.8281, 19°	" "
"	"	.8241, 25°	
"	"	.7724, 99°	
Palmitonitril	$C_{15} H_{31} . C N$	.8224, 31°	" "
"	"	.8186, 40°	
"	"	.7761, 98°.9	
Stearonitril	$C_{17} H_{35} . C N$	.8178, 41°	" "
"	"	.8149, 45°	
"	"	.7790, 99°.2	

2d. Amines of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Trimethylamine	$N. (C H_3)_3$	.673, 0°	Blennard. Roscoe and Schorlemmer's Treatise.
Ethylamine	$N H_2 . C_2 H_5$	.6964, 8°	Wurtz. J. 3, 446.
Diethylamine	$N H. (C_2 H_5)_2$	.7262, 0°	Oudemans. Bei. 6, 353. Values given for every 5°.
"	"	.7159, 10°	
"	"	.7055, 20°	
"	"	.6949, 30°	
"	"	.6844, 40°	
"	"	.6735, 50°	
"	"	.6680, 55°	
"	"	.7092, 19°	Gladstone. Bei. 9, 249.
"	"	.6684 } 56°	Schiff. Ber. 19, 560.
"	"	.6686 } 56°	
Triethylamine	$N. (C_2 H_5)_3$	.7277, 20°	Brühl. Bei. 4, 779.
"	"	.7317, 19°	Gladstone. Bei. 9, 249.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Triethylamine	$N.(C_2H_5)_3$	.6621, 89°	Schiff. Ber. 19, 560.
Propylamine	$NH_2.C_3H_7$	.7283, 0°	Silva. Z. C. 12, 638.
"	"	.7124, 21°	
"	"	.7186, 20°	Linnemann. A. C. P. 161, 18.
"	"	.6883, 49°.5	Schiff. Ber. 19, 560.
Isopropylamine	"	.690, 18°	Siersch. J. 21, 682.
Dipropylamine	"	.756, 0°	Vincent. Ber. 19, ref. 680.
Diisopropylamine	$NH.(C_3H_7)_2$	.722, 22°	Siersch. J. 21, 682.
Tripropylamine	$N.(C_3H_7)_3$	.7699, 0°	Zander. A. C. P. 214, 181.
"	"	.6426, 156°.5	
"	"	.771, 0°	Vincent. Ber. 19, ref. 680.
Butylamine	$NH_2.C_4H_9$	.7553, 0°	Lieben and Rossi. A. C. P. 93, 124.
"	"	.7333, 26°	
"	"	.7401, 20°	Linnemann and Zotta. Ann. (4), 27, 275.
Isobutylamine	"	.7357, 15°	Linnemann. Ann. (4), 27, 268.
"	"	.6865, 67°.7	Schiff. Ber. 19, 560.
Trimethylcarbinolamine	"	.6987, 15°	Linnemann. Ann. (4), 27, 268.
"	"	.7137, 0°	Rudneff. Ber. 12, 1023.
"	"	.7054, 8°	
"	"	.6931, 15°	
"	"	.7155, 0°	Brauner. A. C. P. 192, 72.
"	"	.7078, 7°.8	
"	"	.7004, 15°	
Tributylamine	$N.(C_4H_9)_3$	.791, 0°	Lieben and Rossi. A. C. P. 165, 109.
"	"	.7782, 20°	
"	"	.7677, 40°	
Triisobutylamine	"	.785, 21°	Sachtleben. Ber. 11, 734.
Amylamine	$NH_2.C_5H_{11}$	.7503, 18°	Wurtz. J. 3, 451.
"	"	.815, 0°	Wurtz. J. 19, 425.
"	"	.7517, 22°.5	Plimpton. J. C. S. 39, 33.
" Active	"	.7725, 0°	Plimpton. J. C. S. 39, 331.
" Inactive	"	.7678, 0°	
"	"	.6848, 94°.8	Schiff. Bei. 9, 559.
Dimethylethylcarbinolamine.	"	.755, 0°	Wurtz. J. 19, 425.
"	"	.7611, 0°	Rudneff. J. C. S. 38, 545.
"	"	.7475, 15°	
Diamylamine	$NH.(C_5H_{11})_2$	.7825, 0°	Silva. Z. C. 10, 157.
" Active	"	.7878, 0°	Plimpton. J. C. S. 39, 331.
" Inactive	"	.7776, 14°	
Triamylamine. Active	$N.(C_5H_{11})_3$	.7964, 13°	" "
" Inactive	"	.7882, 13°	
Hexylamine	$NH_2.C_6H_{13}$	.768, 17°	Pelouze and Cahours. J. 16, 527.
Secondary hexylamine	"	.7638	Uppenkamp. Ber. 8, 57.
Octylamine	$NH_2.C_8H_{17}$	.786	Squire. J. 7, 485.

3d. The Aniline Series.

Name.	Formula.	Sp. Gravity.	Authority.
Amidobenzene, or aniline	$C_6 H_5 . H_2 N$	1.020, 16°	Hofmann. A. C. P. 47, 50.
" "	"	1.028	Fritzche. J. P. C. 20, 453.
" "	"	1.0361, 0°	Kopp. A. C. P. 98, 367.
" "	"	1.0251, 13°.7	
" "	"	1.018, 15°.5	Städeler and Arndt. J. 17, 425.
" "	"	1.024, 17°.5	Lucius.
" "	"	1.026, 15°	Kern. Ber. 10, 199.
" "	"	.8527, 183°	Ramsay. J. C. S. 35, 463.
" "	"	1.0379, 0°	Thorpe. J. C. S. 37, 371.
" "	"	.87274, 183°.7	
" "	"	1.02478, 16°.3	Johst. P. A. (2), 20, 56.
" "	"	1.0216, 20°	Brühl.
" "	"	1.0131, 25°.7	Schall. Ber. 17, 2555.
" "	"	.9484, 100°.9	
" "	"	1.016, 13°	Gladstone. Bei. 9, 249.
" "	"	1.0322, 7°.5	
" "	"	.8751, 183°.1	Schiff. Bei. 9, 559.
" "	"	.92256, 130°.9	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 655.
" "	"	.91858, 135°.1	
" "	"	.90708, 147°.2	
" "	"	.90632, 148°	
" "	"	.89272, 162°	
" "	"	.89233, 162°.6	
" "	"	.88077, 178°.9	
" "	"	.88097, 178°.9	
" "	"	.87443, 181°.6	
" "	"	.87424, 181°.8	
" "	"	.87384, 183°.1	
" "	"	.87356, 183°.1	
" "	"	1.0216, 20°	Knops. V. H. V. 1887, 17.
" "	"	1.02204, 20°	Weegmann. Z. P. C. 2, 218.
Methylaniline	$C_6 H_5 . C H_3 . H N$	.976, 15°	Hofmann. Ber. 7, 526.
Benzylamine	$C_6 H_5 . C H_2 H_2 N$	.990, 14°	Limpricht. J. 20, 510.
Orthotoluidine	$C_6 H_4 . C H_3 . H_2 N$	1.0002, 16°.3	Rosenstiehl. J. 21, 745.
"	"	1.003, 20°.2	Three preparations. Beilstein and Kuhlberg. Z. C. 12, 523.
"	"	1.002, 22°	
"	"	.998, 25°.5	
"	"	1.046	Rüdorff. Ber. 12, 251.
"	"	.8302, 197°	Ramsay. J. C. S. 35, 463.
"	"	.9986, 20°	Brühl. Bei. 4, 780.
"	"	1.0038, 15°	Hirsch. Ber. 18, 1511.

Name.	Formula.	Sp. Gravity.	Authority.
Orthotoluidine	$C_6H_4.CH_3.H_2N$	.89397, 142°.7	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 657.
"	"	.89292, 143°.2	
"	"	.87527, 163°.2	
"	"	.87456, 163°.9	
"	"	.86064 } 178°.4	
"	"	.86078 } 178°.4	
"	"	.85214 } 186°.9	
"	"	.85185 } 186°.9	
"	"	.84453, 198°	
"	"	.84348 } 199°	
"	"	.84320 } 199°	
Metatoluidine	"	.998, 25°	Lorenz. C. N. 30, 166.
"	"	.88528 } 149°	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 658.
"	"	.88561 } 149°	
"	"	.86525, 169°	
"	"	.86283, 171°	
"	"	.85231, 184°	
"	"	.85121, 185°	
"	"	.84369, 191°	
"	"	.84293, 193°	
"	"	.83523 } 201°	
"	"	.83537 } 201°	
"	"	.83385 } 203°	
"	"	.83351 } 203°	
Paratoluidine	"	.88313, 143°	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 658.
"	"	.88269, 143°.2	
"	"	.86131 } 168°	
"	"	.86130 } 168°	
"	"	.85025, 178°.4	
"	"	.84858, 181°	
"	"	.83814 } 192°.6	
"	"	.83850 } 192°.6	
"	"	.83171 } 200°	
"	"	.83178 } 200°	
"	"	.82995, 201°.5	
Dimethylaniline	$C_6H_5.(CH_3)_2.N$	.9553	Hofmann. C. N. 27, 1.
"	"	.9645, 15°	Kern. Ber. 10, 199.
"	"	.7941, 190°	Ramsay. J. C. S. 35, 463.
"	"	.9575, 20°	Brühl. A. C. P. 235, 1.
Ethylaniline	$C_6H_5.C_2H_5HN$	.954, 18°	Hofmann. J. 2, 398.
Ethylamidobenzene. 1.2	$C_6H_4.C_2H_5.H_2N$	.983, 22°	Beilstein and Kuhlberg. A.C.P. 156, 206.
" 1.4	"	.975, 22°	" "
Methyltoluidine. 1.2	$C_6H_4.CH_3.CH_3HN$	.973, 15°	Monnet, Reverdin, and Nölting. Ber. 11, 2278.
Xylidine. 1.2.4	$C_6H_3(CH_3)_2H_2N$	.9942, 20°	Wroblevsky. Ber. 12, 1227.
" "	"	1.0755, 17°.5	Jacobsen. Ber. 17, 160.
" "	"	.991, 15°	Nölting and Forel. Ber. 18, 2671.

Name.	Formula.	Sp. Gravity.	Authority.
Xylidine. 1.3.4	$C_6 H_3 (C H_3)_2 H_2 N$	.985, 18°.5	Tawildarow. Z. C. 13, 418.
" "	"	.9184, 25°	Hofmann. Ber. 9, 1295.
" "	"	.86651 } 159°.5	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 662.
" "	"	.86687 } 159°.5	"
" "	"	.84874, 182°	"
" "	"	.83473, 197°	"
" "	"	.82374, 205°	"
" "	"	.81633 } 215°.5	"
" "	"	.81597 } 215°.5	"
" "	"	.81454 } 218°	"
" "	"	.81436 } 218°	"
" 1.3.5	"	.9935, 0°	Wroblevsky. Ber. 10, 1249.
" "	"	.972, 15°	Nölting and Forel. Ber. 18, 2678.
" 1.4.2	"	.980, 15°	Nölting and Forel. Ber. 18, 2680.
"	"	.9867, 19°	Gladstone. Bei. 9, 249.
Dimethyltoluidine. 1.2	$C_6H_4. CH_3. (CH_3)_2N$	.9324	Hofmann. C. N. 27, 1.
" 1.3	"	.9368	" "
" 1.4	"	.988	" "
Propylaniline	$C_6 H_5. C_3 H_7 H N$	.949, 18°	Pictet and Crépieux. Ber. 21, 1106.
Ethyltoluidine. 1.3	$C_6H_4. C H_3. C_2H_5H N$	.869, 20°	Wroblevsky. J. C. S. (2), 13, 455.
" " 1.4	"	.9391, 15°.5	Morley and Abel. J. 4, 497.
Cumidine	$C_6 H_4. C_3 H_7. H_2 N$	.8526	Nicholson. J. 1, 664.
Pseudocumidine. 1.3.5.6	$C_6 H_2 (C H_3)_3 H_2 N$	.9633	Hofmann. C. N. 27, 1.
Diethylaniline	$C_6 H_5 (C_2 H_5)_2 N$	.939, 18°	Hofmann. J. 2, 399.
Isobutylaniline	$C_6 H_5. C_4 H_9. H N$	.9262, 15°	Giannetti. Ber. 14, 1759.
"	"	.940, 18°	Pictet and Crépieux. Ber. 21, 1106.
Dimethylxylidine	$C_6H_3(C H_3)_2(C H_3)_2N$	.9293	Hofmann. C. N. 27, 1.
Tetramethylaniline	$C_6 H (C H_3)_4 H_2 N$	.978, 24°	Hofmann. Ber. 17, 1912.
Isoamylaniline	$C_6 H_5. C_5 H_{11} H N$	.928, 15°	Pictet and Crépieux. Ber. 21, 1106.
Diethyltoluidine. 1.4	$C_6H_4. C H_3 (C_2 H_5)_2 N$	.9242, 15°.5	Morley and Abel. J. 7, 498.
Dimethylmesidine. 1.3.5.6	$C_6 H_2(C H_3)_3(C H_3)_2 N$	.9076	Hofmann. C. N. 27, 1.
Methylamylaniline	$C_6 H_5. C_5 H_{11} C H_3 N$	.906, 20°	Claus and Rautenberg. Ber. 14, 622.
Dipropylaniline	$C_6 H_5 (C_3 H_7)_2 N$	.9240, 0°	Zander. A. C. P. 214, 181.
"	"	.7267, 245°.4	"
Diisopropylaniline	"	.9338, 0°	" "
"	"	.7504, 221°	" "
Trimethyldiethylaniline	$C_6.(CH_3)_3(C_2H_5)_2H_2N$	.971	Ruttan. Ber. 19, 2384.
Allylaniline	$C_6 H_5. C_3 H_5 H N$	.982, 25°	Schiff. J. 17, 415.

Name.	Formula.	Sp. Gravity.	Authority.
Diallylaniline	$C_6H_5(C_3H_5)_2N$	.9680, 0°	Zander. A.C.P. 214, 181.
"	"	.7667, 244°	
Diphenylamine	$NH.(C_6H_5)_2$	1.156, 4°	Schröder. Ber. 12, 561.
"	"	1.161, 4°	
"	"	.8293, 310°	Ramsay. J.C.S. 35, 463.
Methyldiphenylamine	$N.(C_6H_5)_2CH_3$	1.0476, 20°	Brühl. A.C.P. 235, 1.
Dibenzylamine	$NH.(C_7H_7)_2$	1.033, 14°	Limpricht. J. 20, 510.
Amidobenzylamine	$C_7H_{10}N_2$	1.08, 20°	Amsel and Hofmann. Ber. 19, 1288.
Metamidodimethylaniline	$C_8H_{12}N_2$	.995, 25°	Groll. Ber. 19, 200.

4th. The Pyridine Series.

Name.	Formula.	Sp. Gravity.	Authority.
Pyridine	C_5H_5N	.9858, 0°	Anderson. J. 10, 397.
"	"	.924, 22°	Thenius. J. 14, 502.
"	"	.8617, 117°	Ramsay. J.C.S. 35, 463.
"	"	.9802, 0°	Richard. Ber. 13, 198.
"	"	.8823, 115°	Schiff. Ber. 19, 560.
"	"	.8826, 115°	
"	"	1.0033, 0°	Ladenburg. Ber. 21, 289.
a Picoline	C_6H_7N	.955, 10°	Anderson. A.C.P. 60, 93.
"	"	.9613, 0°	Anderson. J. 10, 397.
"	"	.933, 22°	Thenius. J. 14, 502.
"	"	.8197, 134°	Ramsay. J.C.S. 35, 463.
"	"	.9560, 0°	Richard. Ber. 13, 198.
"	"	.96161, 0°	Thorpe. J.C.S. 37, 371.
"	"	.83258, 133°.5	
"	"	.94093, 23°.5	Gladstone. Bei. 9, 249.
"	"	.96559, 0°	Lange. Ber. 18, 3436.
"	"	.96477, 4°	Dürkopf and Schlaugk. Ber. 20, 1660.
"	"	.9656, 0°	Ladenburg. C. R. 103, 692.
β Picoline	"	.97712, 0°	Heskiel. Ber. 18, 3091.
"	"	.94965, 30°	
"	"	.9771, 0°	Ladenburg. C. R. 103, 692.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
γ Picoline	C_6H_7N	.9708, 0°	Lange. Ber. 18, 3436.
"	"	.9708, 0°	Ladenburg. C. R. 103, 692.
"	"	.9742, 0°	Ladenburg. Ber. 21, 287.
α Lutidine	C_7H_9N	.928	Williams. J. 7, 494.
"	"	.9467, 0°	Anderson. J. 10, 397.
"	"	.945, 22°	Thenius. J. 14, 502.
"	"	.9467, 0°	Williams. J. 17, 437.
"	"	.7916, 154°	Ramsay. J. C. S. 35, 463.
"	"	.9377, 0°	Richard. Ber. 13, 198.
"	"	.9545, 0°	Ladenburg and Roth. Ber. 18, 52.
" α—γ	"	.9503, 0°	Ladenburg and Roth. Ber. 18, 913.
" α—α	"	.9424, 0°	Ladenburg. C. R. 103, 692.
β Lutidine	"	.9555, 0°	Williams. J. 17, 437.
"	"	.9598, 0°	Coninck. C. R. 91, 296.
α Ethylpyridine	"	.9495 } 0°	Ladenburg. Ber. 20, 1653.
"	"	.9498 } 0°	
γ Ethylpyridine	"	.9522, 0°	Ladenburg. Ber. 18, 2963.
"	"	.9358, 20°	
α Collidine	$C_8H_{11}N$	.921	Anderson. J. 7, 490.
"	"	.9439, 0°	Anderson. J. 10, 397.
"	"	.953, 22°	Thenius. J. 14, 502.
"	"	.943	Wurtz. Ber. 12, 1710.
"	"	.7839, 173°	Ramsay. J. C. S. 35, 463.
"	"	.9291, 0°	Richard. Ber. 13, 198.
"	"	.917, 15°	Hantzsch. Ber. 15, 2914.
"	"	.9286, 16°.8	Weidel and Pick. S.W. A. 90, 972.
"	"	.9224, 15°	Mohler. Ber. 21, 1014.
β Collidine	"	.9656, 0°	Coninck. C. R. 91, 296.
Aldehyde collidine	"	.9389, 4°	Dürkopf. Ber. 18, 920.
α Isopropylpyridine	"	.9342, 0°	Ladenburg. C. R. 103, 692.
γ Isopropylpyridine	"	.9408, 0°	Ladenburg and Schrader. Ber. 17, 1121.
"	"	.9439, 0°	Ladenburg. C. R. 103, 692.
γ Propylpyridine	"	.9393, 0°	Two lots. Ladenburg. Ber. 17, 772.
α Propylpyridine	"	.9411, 0°	
"	"	.9306, 10°	
Parvoline	$C_9H_{13}N$	.966, 22°	Thenius. J. 14, 502.
"	"	.916, 14°	Engelmann. J.C.S. 50, 259.

Name.	Formula.	Sp. Gravity.	Authority.
Parvoline	$C_9 H_{13} N$	.94185, 0°	Dürkopf and Schlaugk. Ber. 21, 832.
"	"	.92894, 16°	
Coridine	$C_{10} H_{15} N$	.974, 22°	Thenius. J. 14, 502.
Rubidine	$C_{11} H_{17} N$	1.017, 22°	" "
Viridine	$C_{12} H_{19} N$	1.024, 22°	" "
Allyl pyridine	$C_8 H_9 N$	.9595, 0°	Ladenburg. Ber. 19, 2578.
Piperidine. From piperine	$C_5 H_{11} N$	.8810, 0°	Ladenburg and Roth. Ber. 17, 513.
" Synthetic	"	.8814, 4°	
"	"	.7791	Schiff. Ber. 19, 560.
"	"	.7801 105°	
"	"	.7810	
α Methylpiperidine	$C_6 H_{13} N$	.8601, 0°	Ladenburg and Roth. Ber. 18, 47.
"	"	.860, 0°	Ladenburg. C. R. 103, 747.
β Methylpiperidine	"	.8686, 4°	Hesekiel. Ber. 18, 910.
"	"	.8684, 0°	Ladenburg, C. R. 103, 747.
α—α Dimethylpiperidine	$C_7 H_{15} N$	.8492, 4°	Ladenburg and Roth. Ber. 18, 54.
α—γ Dimethylpiperidine	"	.8615, 0°	Ladenburg. C. R. 103, 747.
α Ethylpiperidine	"	.8674, 0°	Ladenburg. Ber. 18, 2963.
γ Ethylpiperidine	"	.8759, 0°	Ladenburg. Ber. 18, 2964.
Methyl-α-ethylpiperidine	$C_8 H_{17} N$	.8495, 0°	Ladenburg. C. R. 103, 747.
α Propylpiperidine. Coniin	"	.89	Geiger.
" "	"	.878	Blyth. J. 2, 388.
" "	"	.846, 12°.5	Petit. B. S. C. 27, 337.
" "	"	.886	Schorm. Ber. 14, 1767.
" "	"	.913, 0°	Two preparations. Schiff. A. C. P. 166, 88.
" "	"	.899, 15°	
" "	"	.842, 90°	
" "	"	.886, 0°	
" "	"	.873, 15°	
" "	"	.911, 90°	
" "	"	.863	Ladenburg. Ber. 17, 774.
" "	"	.875, 0°	Ladenburg. Ber. 17, 772.
" "	"	.8626, 0°	Ladenburg. Ber. 19, 2580.
γ Propylpiperidine	"	.870, 0°	Ladenburg. Ber. 17, 772.
α Isopropylpiperidine	"	.8660, 0°	Ladenburg. Ber. 17, 1676.
"	"	.8676, 0°	Ladenburg. C. R. 103, 747.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl-α γ-isopropylpiperidine.	$C_9 H_{19} N$	.8593, 0°	Ladenburg. C. R. 103, 747.
Copellidine	$C_8 H_{17} N$	.8653, 0°	Dürkopf. Ber. 18, 920.
"	"	.8546, 15°	
Methylcopellidine	$C_9 H_{19} N$	.8519, 0°	" "
"	"	.8440, 13°	
Dimethylcopellidine	$C_{10} H_{21} N$	.7816, 25°	" "
α Pipecoleine	$C_6 H_{11} N$	.8801, 0°	Ladenburg. Ber. 20, 1646.
γ Pipecoline	$C_6 H_{13} N$	.8674, 0°	Ladenburg. Ber. 21, 288.
α Isopropylpiperideine	$C_8 H_{15} N$	.8956, 0°	Ladenburg. Ber. 20, 1647.
Hydrolutidine. α—γ	$C_7 H_{13} N$	.8615, 0°	Ladenburg and Roth. Ber. 18, 919.
Hydrotropidine	$C_8 H_{15} N$	.9366, 0°	Ladenburg. Ber. 16, 1409.
"	"	.9259, 15°	
α Coniceine	"	.893, 15°	Hofmann. Ber. 18, 10.
Paradiconiine	$C_{16} H_{27} N$	.915, 15°	Schiff. A. C. P. 166, 88.
Quinoline or chinoline	$C_9 H_7 N$	1.081, 10°	Hofmann. A. C. P. 47, 79.
" "	"	1.1081, 0°	
" "	"	1.0947, 20°	Skraup. Ber. 14, 1002.
" "	"	1.0699, 50°	
" "	"	1.1055, 0°	Coninck. J. C. S. 44, 89.
" "	"	1.0965, 11°.5	
" "	"	1.096 } 10°	Gladstone. Bei. 9, 249.
" "	"	1.1021 } 10°	
" "	"	.9211, 234°	Schiff. Ber. 19, 560.
Lepidine	$C_{10} H_9 N$	1.072, 15°	Williams. J. 9, 536.
Orthomethylquinoline	"	1.0852, 0°	
"	"	1.0734, 20°	Skraup. Ber. 14, 1002.
"	"	1.0586, 50°	
Metamethylquinoline	"	1.0839, 0°	
"	"	1.0722, 20°	Skraup. Ber. 15, 2255.
"	"	1.0576, 50°	
Paramethylquinoline	"	1.0815, 0°	
"	"	1.0671, 20°	Skraup. Ber. 14, 1002.
"	"	1.0560, 50°	
Dimethylquinoline	$C_{11} H_{11} N$	1.0752, 4°	Berend. Ber. 18, 3165.
" α—γ	"	1.0611, 15°	Beyer. J. P. C. (2), 33, 402.
Metadipyridyl	$C_{10} H_8 N_2$	1.1757, 0°	Skraup and Vortmann. M. C. 4, 593.
"	"	1.1635, 20°	
"	"	1.1493, 50°	
Isodipyridine	$C_{10} H_{10} N_2$	1.08	Ramsay. P. M. (5), 6, 29.
"	"	1.1245, 13°	Cahours and Etard. Ber. 13, 777.
Dipicoline	$C_{12} H_{14} N_2$	1.12	Ramsay. P. M. (5), 6, 31.
"	"	1.077	Anderson.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nicotine	$C_{10} H_{14} N_2$	1.033, 4°	Barral. J. 1, 614.
"	"	1.027, 15°	
"	"	1.018, 30°	
"	"	1.0006, 50°	
"	"	.9424, 101°.5	
"	"	1.01837, 10°.2	Landolt. A. C. P. 189, 241.
"	"	1.01101, 20°	
"	"	1.00373, 30°	
"	"	1.0111, 15°	Skalweit. Ber. 14, 1809.
Hydronicotine	$C_{10} H_{16} N_2$	.993, 17°	Etard. C. R. 97, 1218.
Dipiperidyl	$C_{10} H_{20} N_2$	.9561, 4°	Liebrecht. Ber. 19, 2591.
a Stilbazoline	$C_{13} H_{19} N$	.9874, 0°	Baurath. Ber. 21, 818.
Dihydro-*a*-stilbazol	$C_{13} H_{13} N$	1.0465, 0°	" "

5th. Miscellaneous Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dimethyl hydrazin	$C_2 H_8 N_2$	.801, 11°	Renouf. Ber. 13, 2171.
Ethylene diamine	$C_2 H_4 (N H_2)_2$	.902	Rhoussopolos and Meyer. J. C. S. 42, 940.
Propylene diamine	$C_3 H_6 (N H_2)_2$	.878, 15°	Hofmann. Ber. 6, 810.
Pentamethylene diamine	$C_5 H_{10} (N H_2)_2$	.9174, 0°	Ladenburg. Ber. 18, 2957.
β Methyltetramethylene diamine.	"	.8836, 20°	Oldach. Ber. 20, 1655.
Ethylene cyanide	$C_2 H_4 (C N)_2$	1.023, 45°	Simpson. J. 14, 654.
Pyrotartronitril	$C_3 H_6 (C N)_2$	.9961, 11°	Henry. Ber. 18, ref. 330.
Crotonitril	$C_4 H_5 N$	.8389, 12°	Will and Körner.
"	"	.8491, 0°	Rinne and Tollens. A. C. P. 159, 105.
"	"	.8351, 15°	
Allyl carbamine	$C_3 H_5 . C N$	.812, 0°	Lieke. A. C. P. 112, 319.
" "	"	.794, 17°	
Allylamine	$C_3 H_5 . H_2 N$	.864, 15°	Oeser. J. 18, 506.
"	"	.7754, 10°.5	Foursamples. Gladstone. Bei. 9, 249.
"	"	.7775, 11°	
"	"	.7693, 17°.5	
"	"	.7684, 19°	
"	"	.7261, 56°	Schiff. Bei. 9, 559.
Triallylamine	$(C_3 H_5)_3 N$	.8206, 0°	Zander. A. C. P. 214, 181.
"	"	.6826, 155°.5	
Propylallylamine	$C_3 H_7 . C_3 H_5 . H N$	.7708, 18°	Liebermann and Paal. Ber. 16, 523.
Isoamylallylamine	$C_5 H_{11} . C_3 H_5 . H N$	.7777, 18°	" "

Name.	Formula.	Sp. Gravity.	Authority.
Pyrrol	$C_4 H_5 N$	1.077	Anderson. J. 10, 399.
"	"	.7276, 133°	Ramsay. J. C. S. 35, 463.
"	"	.9752, 12°.5	Weidel and Ciamician. Ber. 13, 71.
"	"	.9606	Gladstone. Bei. 9, 249.
Methylpyrrol	$C_5 H_7 N$	.9203, 10°	Bell. Ber. 10, 1866.
Ethylpyrrol	$C_6 H_9 N$	.8881, 16°	Bell. Ber. 9, 936.
"	"	.9042, 10°	Bell. Ber. 10, 1862.
Amylpyrrol	$C_9 H_{15} N$	.8786, 10°	Bell. Ber. 10, 866.
Pyrrolidin	$C_4 H_9 N$	.879, 0°	Petersen. Ber. 21, 290.
"	"	.871, 10°	
Methylpyrrolidin	$C_5 H_{11} N$	.8654, 0°	Oldach. Ber. 20, 1155.
Methylphenylpyrazol	$C_{10} H_{10} N_2$	1.085, 15°	Claisen and Stylos. Ber. 21, 1143 and 1147.
"	"	1.081, 15°	
Ethylphenylpyrazol	$C_{11} H_{12} N_2$	1.064, 15°	Claisen and Stylos. Ber. 21, 1148.
Propylphenylpyrazol	$C_{12} H_{14} N_2$	1.0435, 15°	" "
α Glucosine	$C_6 H_8 N_2$	1.038, 0°	Tanret. B. S. C. 44, 104.
β Glucosine	$C_7 H_{10} N_2$	1.012, 0°	" "
"	"	.9826, 12°	Morin. Ber. 21, ref. 188.
Methylglyoxalin	$C_4 H_6 N_2$	1.0363	Wallach and Schulze. Ber. 14, 424.
"	"	1.0359, 23°	Goldschmidt. Ber. 14, 1846.
Ethylglyoxalin	$C_5 H_8 N_2$	.999	Wallach. Ber. 16, 535.
Oxalmethylethylin	"	1.0051, 11°	Radziszewski. Ber. 16, 487.
Propylglyoxalin	$C_6 H_{10} N_2$	.967, 16°	Wallach. Ber. 15, 650.
Oxalethylethylin	"	.9820	Wallach and Stricker. Ber. 13, 512.
"	"	.980	Radziszewski. Ber. 16, 487.
Oxalethylpropylin	$C_7 H_{12} N_2$	.9813	" "
Oxalpropylethylin	"	.9641	" "
Oxalpropylpropylin	$C_8 H_{14} N_2$	.9520	Wallach and Schulze. Ber. 14, 424.
"	"	.951	Radziszewski. Ber. 16, 487.
Amylglyoxalin	"	.940, 18°	Wallach. Ber. 15, 651.
Oxalethylisoamylin	$C_9 H_{16} N_2$	.9291, 19°.6	Radziszewski and Szul. Ber. 17, 1291.
Oxalpropylisoamylin	$C_{10} H_{18} N_2$	.9149, 18°	" "
Oxalisobutylisoamylin	$C_{11} H_{20} N_2$	.9048, 16°.1	" "
Oxalisoamylisoamylin	$C_{12} H_{22} N_2$	.9029, 19°	" "

Name.	Formula.	Sp. Gravity.	Authority.
Oxalmethyloenanthylin	$C_{10}H_{18}N_2$	.9282, 16°.5	Karcz. Ber. 20, ref. 474
Oxalethyloenanthylin	$C_{11}H_{20}N_2$	.9210, 16°.5	" "
Oxalpropyloenanthylin	$C_{12}H_{22}N_2$	.9192, 17°	" "
Benzonitril	$C_6H_5.CN$	1.0073, 15°	Fehling. A. C. P. 49, 91.
"	"	1.0230, 0°	Kopp. A. C. P. 98, 367.
"	"	1.0084, 16°.8	Kopp. A. C. P. 98, 367.
"	"	.8330, 192°	Ramsay. J. C. S. 35, 463.
"	"	1.0052, 18°	Gladstone. Bei. 9, 249.
Benzyl cyanide, or *a* toluic nitril.	$C_7H_7.CN$	1.0155, 8°	Radziszewski. Ber. 3, 198.
" " "	"	1.0146, 18°	Hofmann. Ber. 7, 519.
Phenylpropionitril	$C_8H_9.CN$	1.0014, 18°	Hofmann. Ber. 7, 520.
Orthoxylyl cyanide	"	1.0156, 22°	Radziszewski and Wispek. Ber. 18, 1279.
Metaxylyl cyanide	"	1.0022, 22°	" "
Paraxylyl cyanide	"	.9922, 22°	" "
Cumonitril	$C_9H_{11}.CN$	.765, 14°	Hofmann. J. 1, 595.
Azobenzene	$C_{12}H_{10}N_2$	1.180, 4°	Schröder. Ber. 12, 561.
"	"	1.196, 4°	Schröder. Ber. 12, 561.
"	"	1.202, 4°	Schröder. Ber. 12, 561.
"	"	1.223, 4°	Schröder. Ber. 12, 561.
"	"	.8256, 293°	Ramsay. J. C. S. 35, 463.
Phenyl hydrazin	$C_6H_8N_2$	1.091, 21°	Fischer. A. C. P. 190, 82.
" "	"	1.097, 22°.7	Fischer. A. C. P. 236, 198.
Chinaldin	$C_{10}H_9N$	1.0646, 20°	Küsel. Ber. 19, 2249.
Piperyl hydrazin	$C_5H_{12}N_2$	.9283, 14°.6	Knorr. A. C. P. 221, 301.
Diethylaniline azylin	$C_{20}H_{28}N_4$	1.107, 15°, s.	Lippmann and Fleissner. Ber. 16, 1417.
Methyl indol	C_9H_9N	1.0707, 0°	Lipp. Ber. 17, 2511.
Cyanoconicine	$C_9H_{14}N_2$	.93	E. v. Meyer. B. S. C. 39, 124.
Ptomaine	$C_8H_{11}N$	.9865, 0°	Coninck. C. R. 106, 859.
"Acetylamine. ?"	C_2H_5N. ?	.975, 15°	Natanson. J. 9, 527.

XLVIII. COMPOUNDS CONTAINING C, H, N, AND O.

1st. Nitrites and Nitrates of the Paraffin Series.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl nitrite	$C H_3. N O_2$	.991	Strecker. J. 7, 521.
Ethyl nitrite	$C_2 H_5. N O_2$	.886, 4°	Dumas and Boullay. Ann. (2), 37, 19.
" "	"	.947, 15°	Liebig. A.C.P. 30, 143.
" "	"	.898	Mohr. J. 7, 561.
" "	"	.900, 15°.5	Brown. J. 9, 575.
Propyl nitrite	$C_3 H_7. N O_2$	.935, 21°	Cahours. Les Mondes, 32, 280.
Isopropyl nitrite	"	.856, 0°	Silva. Z. C. 12, 687.
" "	"	.844, 24°	Silva. Z. C. 12, 687.
Isobutyl nitrite	$C_4 H_9. N O_2$	.89445, 0°	Chapman and Smith. J. C. S. 22, 153.
" "	"	.8771, 16°	Chapman and Smith. J. C. S. 22, 153.
" "	"	.82568, 50°	Chapman and Smith. J. C. S. 22, 153.
Trimethylcarbyl nitrite	"	.8915, 0°	Bertoni. Ber. 19, ref. 98.
Amyl nitrite	$C_5 H_{11}. N O_2$	.8773	Rieckher. J. 1, 699.
" "	"	.9020	Hilger. Am. Ch. 5, 231.
" "	"	.9026	Hilger. Am. Ch. 5, 231.
" "	"	.8734, 21°	Gladstone. Bei. 9, 249.
Dimethylethylcarbyl nitrite.	"	.9038, 0°	Bertoni. G. C. I. 16, 512.
Octyl nitrite	$C_8 H_{17}. N O_2$	.862, 17°	Eichler. Ber. 12, 1887.
Methylhexylcarbyl nitrite	"	.881, 0°	Bertoni. G. C. I. 16, 512.
Methyl nitrate	$C H_3. N O_3$	1.182, 20°	Dumas and Peligot. Ann. (2), 58, 39.
Ethyl nitrate	$C_2 H_5. N O_3$	1.112, 17°	Millon. Ann. (3), 8, 236.
" "	"	1.1322, 0°	Kopp. A. C. P. 98, 367.
" "	"	1.1123, 15°.5	Kopp. A. C. P. 98, 367.
" "	"	1.0948, 17°	Wittstein. J. 18, 470.
" "	"	.9991, 87°	Ramsay. J. C. S. 35, 463.
" "	"	1.1067, 25°	Gladstone. Bei. 9, 249.
Isopropyl nitrate	$C_3 H_7. N O_3$	1.054, 0°	Silva. Z. C. 12, 637.
" "	"	1.036, 19°	Silva. Z. C. 12, 637.
Isobutyl nitrate	$C_4 H_9. N O_3$	1.0384, 0°	Chapman and Smith. J. C. S. 22, 153.
" "	"	1.020, 16°	Chapman and Smith. J. C. S. 22, 153.
Amyl nitrate	$C_5 H_{11}. N O_3$	.902, 22°	Rieckher. J. 1, 699.
" "	"	.994, 10°	Hofmann. J. 1, 699.
" "	"	1.000, 7°—8°	Chapman and Smith. J. 20, 550.
" "	"	.8698, 147°	Schiff. Bei. 9, 559.
Cetyl nitrate	$C_{16} H_{33}. N O_3$	.91	Champion. C. R. 73, 571.

2d. Nitro-Derivatives of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nitromethane	$C H_3 N O_2$	1.0236, 101°.5	Schiff. Bei. 9, 559.
Nitroethane	$C_2 H_5 N O_2$	1.0582, 13°	Meyer and Stuber. Ann. (4), 28, 138.
"	"	.9829, 114°.5	Schiff. Bei. 9, 559.
"	"	1.0550, 18°	Gladstone. Bei. 9, 249.
Nitroheptane	$C_7 H_{15} N O_2$	.9369, 19°	Beilstein and Kurbatow. Ber. 13, 2029.
Dinitroethane	$C_2 H_4 (N O_2)_2$	1.3503, 23°.5	Meer. Ber. 8, 1080.
Dinitropropane	$C_3 H_6 (N O_2)_2$	1.258, 22°.5	Meer. Ber. 8, 1087.
Dinitrobutane	$C_4 H_8 (N O_2)_2$	1.205, 15°	Chancel. Ber. 16, 1495.
Dinitrohexane	$C_6 H_{12} (N O_2)_2$	1.1381, 0°	Chancel. C. R. 100, 601.
"	"	1.1333, 5°	
"	"	1.1284, 10°	
"	"	1.1235, 15°	
"	"	1.1185, 20°	
"	"	1.1135, 25°	
"	"	1.1085, 30°	
"	"	1.1034, 35°	
"	"	1.0983, 40°	
Ethyl nitroacetate	$C_4 H_7 N O_4$	1.133, 0°	Forcrand. C. R. 88, 975.
Nitrocaprylic acid	$C_8 H_{15} N O_4$	1.093, 18°	Wirz. A. C. P. 104, 289.
Ethyl nitrocaprylate	$C_{10} H_{19} N O_4$	1.081, 18°	Wirz. A. C. P. 104, 290.
Nitrosodiethyline	$C_4 H_{10} N_2 O$	.951, 17°.5	Geuther. J. 16, 409.
Nitrosodipropylamine	$C_6 H_{14} N_2 O$	.924, 14°	Siersch. J. 20, 537.
"	"	.981, 0°	Vincent. Ber. 19, ref. 680.
Derivative of nitroethane	$C_5 H_7 N O$	1.0102, 15°	Götting. A. C. P. 243, 104.
" "	$C_6 H_9 N O$	.9750, 15°	" "
" "	"	1.0	Ssokolow. Ber. 19, ref. 540.

3d. Aromatic Nitro-Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nitrobenzene	$C_6H_5.NO_2$	1.209, 15°	Mitscherlich. P. A. 31, 625.
"	"	1.2002, 0°	Kopp. A. C. P. 98, 367.
"	"	1.1866, 14°.4	
"	"	1.2159, 5°–10°	Regnault. P. A. 62, 50.
"	"	1.2107, 10°–15°	
"	"	1.2504, 15°–20°	
"	"	1.206, 20°	Naumann. Ber. 10, 2015.
"	"	1.0210, 220°	Ramsay. J. C. S. 35, 463.
"	"	1.2039, 20°	Brühl. Bei. 4, 780.
"	"	1.1740, 25°.5	Schall. Ber. 17, 2555.
"	"	1.0851, 116°.2	
"	"	1.2121, 7°.5	Gladstone. Bei. 9, 249.
"	"	1.07134, 150°.7	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 655.
"	"	1.07038, 153°.3	
"	"	1.06276, 158°.4	
"	"	1.04807, 173°.2	
"	"	1.04477, 186°.6	
"	"	1.03246, 189°.4	
"	"	1.03059, 189°.4	
"	"	1.01794, 200°.1	
"	"	1.00846, 207°.3	
"	"	1.00722, 208°.2	
"	"	1.00718, 208°.2	
Dinitrobenzene	$C_6H_4(NO_2)_2$	1.3690, 98°.1	Schiff. A. C. P. 223, 247.
Nitrotoluene	$C_6H_4.CH_3.NO_2$	1.18, 16°.5	Deville. Ann. (3), 3, 175.
"	"	1.1231, 54°	Schiff. A. C. P. 223, 247.
"	"	1.1649, 15°.5	Gladstone. Bei. 9, 249.
Orthonitrotoluene	"	1.162, 23°	Beilstein and Kuhlberg. A. C. P. 155, 17.
"	"	1.163, 23°.5	
"	"	1.159	Leeds. Ber. 14, 483.
"	"	1.02509 } 160°	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 655.
"	"	1.02483 } 160°	
"	"	.99814, 186°.1	
"	"	.99679, 187°.1	
"	"	.98403 } 197°.7	
"	"	.98388 } 197°.7	
"	"	.97149, 208°.7	
"	"	.97087, 209°.2	
"	"	.96192 } 218°	
"	"	.96177 } 218°	
"	"	.96063 } 219°.8	
"	"	.96032 } 219°.8	
Metanitrotoluene	"	1.168, 22°	Beilstein and Kuhlberg. J. 22, 403.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Metanitrotoluene	$C_6H_4 . CH_3 . NO_2$	1.01158 } 171°	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 655.
"	"	1.01128	
"	"	.98775 } 194°.1	
"	"	.98737	
"	"	.97227 } 207°.8	
"	"	.97189	
"	"	.96027 } 218°.8	
"	"	.96008	
"	"	.95099 } 227°	
"	"	.95084	
"	"	.94984, 227°.5	
"	"	.94933 } 228°.5	
"	"	.94914	
Paranitrotoluene	"	1.00668, 177°.5	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 655.
"	"	1.00467, 178°.5	
"	"	.98378 } 201°	
"	"	.98364	
"	"	.96812, 213°	
"	"	.95455, 225°	
"	"	.94531 } 237°.5	
"	"	.94513	
"	"	.94342, 239°	
Dinitrotoluene	$C_6H_3 . CH_3(NO_2)_2$	1.3208, 70°.5	Schiff. A. C. P. 223, 247.
Nitroörthoxylene	$C_6H_3(CH_3)_2NO_2$	1.139, 20°	Jacobsen. Ber. 17, 160.
"	"	1.147, 15°	Noelting and Forel. Ber. 18, 2671.
Nitrometaxylene. 1.3.2	"	1.126, 17°.5	Tawildarow. Z. C. 13, 418.
" "	"	1.126, 24°.5	Beilstein and Kuhlberg.
" "	"	1.112, 15°	Grevingk. Ber. 17, 2430.
" 1.3.4	"	1.124, 25°	Beilstein and Kuhlberg.
" "	"	1.135, 15°	Grevingk. Ber. 17, 2429.
" "	"	.98667, 176°	Taken at different pressures, each t°. being the boiling point at the pressure observed. Neubeck. Z. P. C. 1, 655.
" "	"	.98254, 179°.5	
" "	"	.98057, 182°	
" "	"	.97535, 186°	
" "	"	.95631 } 206°	
" "	"	.95642	
" "	"	.94078, 218°	
" "	"	.92964 } 233°	
" "	"	.92945	
" "	"	.91794 } 243°	
" "	"	.91823	
" "	"	.91634, 244°	
Nitroparaxylene	"	1.132, 15°	Noelting and Forel. Ber. 18, 2680.
Nitrocymene	$C_{10}H_{13} . NO_2$	1.0385, 18°	Landolph. C. C. 4, 596.
Dinitrocymene	$C_{10}H_{12} . (NO_2)_2$	1.206, 18°.5	" "
"	"	1.204, 21°	
Nitronaphthalene	$C_{10}H_7 . NO_2$	1.321 } 4°	Schröder. Ber. 12, 1611.
"	"	1.341	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Nitronaphtholene	$C_{10} H_7. N O_2$	1.2226, 61°.5	Schiff. A. C. P. 223, 247.
Orthonitrophenol	$C_6 H_4. O H. N O_2$	1.443, 4°	Schröder. Ber. 12, 561.
"	"	1.451, 4°	"
"	"	1.2945, 45°.2	Schiff. A. C. P. 223, 247.
Paranitrophenol	"	1.467, 4°	Schröder. Ber. 12, 561.
"	"	1.469, 4°	"
"	"	1.2809, 114°	Schiff. A. C. P. 223, 247.
Trinitrophenol, or picric acid.	$C_6 H_2. O H. (N O_2)_3$	1.813	Rüdorff. Ber. 12, 251.
" "	"	1.750, 4°	Schröder. Ber. 12, 561.
" "	"	1.777, 4°	"
Methyl orthonitrophenate	$C_6 H_4. O C H_3. N O_2$	1.268, 20°	Post and Mehrtens. Ber. 8, 1552.
Methyl paranitrophenate	"	1.233, 20°	" "
Methyl α dinitrophenate	$C_6 H_3. O C H_3. (NO_2)_2$	1.341, 20°	" "
Methyl β dinitrophenate	"	1.319, 20°	" "
Methyl trinitrophenate	$C_6 H_2. O C H_3. (NO_2)_3$	1.408, 20°	" "
Orthonitrobenzoic acid	$C_6 H_4. C O O H. N O_2$	1.5588	Post and Frerichs. Ber. 8, 1549.
" "	"	1.574, 4°	Schröder. Ber. 12, 1611.
" "	"	1.576, 4°	"
Metanitrobenzoic acid	"	1.4721	Post and Frerichs. Ber. 8, 1549.
" "	"	1.492, 4°	Schröder. Ber. 12, 1611.
" "	"	1.496, 4°	"
Paranitrobenzoic acid	"	1.5804	Post and Frerichs. Ber. 8, 1549.
Nitroanisol	$C_6 H_4. O C H_3. N O_2$	1.249, 26°	Brunck. J. 20, 619.
Orthonitroisobutylanisol	$C_6 H_4. O C_4 H_9. N O_2$	1.1046, 20°	Riess. Z. C. 14, 39.
Paranitroisobutylanisol	"	1.1361, 20°	" "
Metanitraniline	$C_6 H_4. H_2 N. N O_2$	1.430, 4°	Schröder. Ber. 12, 561.
Paranitraniline	"	1.415, 4°	" "
"	"	1.433, 4°	

4th. Miscellaneous Nitrates, Nitrites, and Nitro-Compounds.

Name.	Formula.	Sp. Gravity.	Authority.
Allyl nitrite	$C_3 H_5 . N O_2$	.9546, 0°	Bertoni. G. C. I. 15, 368.
Allyl nitrate	$C_3 H_5 . N O_3$	1.09, 10°	Henry. B. S. C. 18, 232.
Ethylene nitrosonitrate	$C_2 H_4 . N O_2 . N O_3$	1.472	Kekulé. Ber. 2, 329.
Ethylene mononitrate	$C_2 H_4 . O H . N O_3$	1.31, 11°	Henry. Ann. (4), 27, 243.
Ethylene dinitrate	$C_2 H_4 (N O_3)_2$	1.4837, 8°	" "
" "	"	1.48	Champion. Z. C. 14, 470.
a Propylene dinitrite	$C_3 H_6 (N O_2)_2$	1.144, 0°	Bertoni. G. C. I. 16, 512.
Propylene dinitrate	$C_3 H_6 (N O_3)_2$	1.335, 5°	Henry. Ann. (4), 27, 243.
Ethylene acetonitrate	$C_2 H_4 . C_2 H_3 O_2 . N O_3$	1.29, 18°	" "
Glyceryl trinitrite	$C_3 H_5 (N O_2)_3$	1.291, 15°.5	Masson. Ber. 16, 1699.
Nitrolactic acid	$C_3 H_5 N O_5$	1.35, 12°.8	Henry. Ann. (4), 28, 415.
Ethyl nitroglycollate	$C_4 H_7 N O_5$	1.2112, 15°.2	" "
Ethyl nitrolactate	$C_5 H_9 N O_5$	1.1534, 13°	" "
Ethyl nitromalonate	$C_7 H_{11} N O_6$	1.149, 15°	Conrad and Bischoff. Ber. 13, 599.
Ethyl nitrotartronate	$C_7 H_{11} N O_7$	1.2778, 16°	Henry. Ann. (4), 28, 415.
Ethyl nitromalate	$C_8 H_{13} N O_7$	1.2094, 16°	" "
Nitroglycerine	$C_3 H_5 N_3 O_9$	1.595, 15°	De Vrij. J. 8, 626.
"	"	1.600, 15°	
"	"	1.5958	Liebe. J. 13, 453.
"	"	1.60	Sobrero. J. 13, 453.
"	"	1.60	Champion. Z. C. 14, 350.
"	"	1.6, 15°	Kern. C. N. 31, 153.
"	"	1.735, s.	Beckerhinns. J. R. C. 4, 148.
"	"	1.599, l.	
"	"	1.601, 14°.5	Hay and Masson. J. C. S. 48, 742.
Nitromannite	$C_6 H_8 N_6 O_{18}$	1.604, 0°, cryst.	Sokoloff. Ber. 12, 698.
"	"	1.446, fused	
"	"	1.503, fused	
"	"	1.537, fused	
Trinitrolactose	$C_{12} H_{19} N_3 O_{17}$	1.479, 0°	Gé. Ber. 15, 2239.
Pentanitrolactose	$C_{12} H_{17} N_5 O_{21}$	1.684, 0°	" "
Acetonitrose	$C_{14} H_{19} N O_{12}$	1.3487, 18°	Colley. B. S. C. 19, 406.
Acetoethyl nitrate	$C_6 H_{14} N_2 O_7$	1.0451, 19°	Nadler. J. 13, 403.
Derivative of menthol	$C_{10} H_{19} N O_2$	1.061, 15°	Moriya. J. C. S. 39, 77.

5th. Miscellaneous Amido-Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethylhydroxylamine	$NH.OH.C_2H_5$	.8827, 7°.5	Gürke. Ber. 14, 258.
Ethylenediamine hydrate	$(NH_2)_2C_2H_4.H_2O$	.970, 15°	Rhoussopolos and Meyer. J. C. S. 42, 940.
Oxypropylpropylamine	$NH.C_3H_7.C_3H_6OH$	.9018, 18°	Liebermann and Paal. Ber. 16, 528.
Oxyisoamylamine	$NH_2.C_5H_{11}O$	.9265, 14°	Radziszewski and Schramm. Ber. 17, 888.
Dioxyisoamylamine	$NH.(C_5H_{11}O)_2$	.9500, 14°	" "
Trioxyamylamine	$N(C_5H_{11}O)_3$	.879, 22°	J. Erdmann. J. 17, 419.
Formamide	$NH_2.COH$	1.1462, 19°	Gladstone. Bei. 9, 249.
Methylformamide	$NH.CH_3.COH$	1.011, 19°	Linnemann. J. 22, 601.
Ethylformamide	$NH.C_2H_5.COH$	.967, 2°	Wurtz. J. 7, 567.
"	"	.952, 21°	Linnemann. J. 22, 602.
Diethylformamide	$N(C_2H_5)_2.COH$	.908, 19°	" "
Acetamide	$NH_2.C_2H_3O$	1.11 } 14°	Mendius. B. D. Z.
"	"	1.13 } 14°	Mendius. B. D. Z.
"	"	1.159, 4°	Schröder. Ber. 12, 561.
Ethylacetamide	$NH.C_2H_5.C_2H_3O$	.942, 4°.5	Wurtz. J. 7, 566.
Ethyldiacetamide	$N.C_2H_5.(C_2H_3O)_2$	1.0092, 20°	Wurtz. Ann. (2), 42, 55.
Dimethylacetamide	$N(CH_3)_2.C_2H_3O$	.9405, 20°	Franchimont. R. T. C. 2, 329.
Diethylacetamide	$N.(C_2H_5)_2.C_2H_3O$	.9248, 8°.5	Wallach and Kamensky. A. C. P. 214, 235.
Propionamide	$NH_2.C_3H_5O$	1.030 } 4°	Schröder. Ber. 12, 561.
"	"	1.037 } 4°	Schröder. Ber. 12, 561.
Amidoacetic acid, or glycocoll.	$C_2H_5NO_2$	1.1607	Curtius. B. S. C. 39, 169.
Ethyl diethylglycocollate	$C_8H_{17}NO_2$	.919, 15°	Kraut. J. R. C. 4, 198.
Amidocaproic acid, or leucine.	$C_6H_{13}NO_2$	1.293, 18°	Engel and Vilmain. B. S. C. 24, 279.
" " "	"	1.282	Lippmann. Ber. 17, 2837.
Oxamide	$C_2H_4N_2O_2$	1.627 } 4°	Schröder. Ber. 12, 561.
"	"	1.657 } 4°	Schröder. Ber. 12, 561.
"	"	1.667 } 4°	Schröder. Ber. 12, 561.
Dimethyloxamide	$C_4H_8N_2O_2$	1.281 } 4°	Schröder. Ber. 12, 1611.
"	"	1.307 } 4°	Schröder. Ber. 12, 1611.
Diethyloxamide	$C_6H_{12}N_2O_2$	1.164 } 4°	" "
"	"	1.178 } 4°	" "
Asparagine	$C_4H_8N_2O_3.H_2O$	1.519, 14°	Watts' Dictionary.
"	"	1.552	Rüdorff. Ber. 12, 252.
Amidosuccinic, or aspartic acid.	$C_4H_7NO_4$	1.6613, active	Pasteur. J. 4, 389.
" "	"	1.6632, inactive	Pasteur. J. 4, 389.

Name.	Formula.	Sp. Gravity.	Authority.
Allylsuccinimide	$C_7 H_9 N O_2$	1.1543, 0°	Moiné. J. C. S. 52, 489.
"	"	1.1432, 12°	
"	"	1.1112, 50°	
"	"	1.0677, 100°	
Ethyl amidoacetacetate	$C_6 H_{11} N O_3$	1.014, 30°	Duisberg. Ber. 15, 1386.
Ethylamidopropiopropionate.	$C_8 H_{15} N O_2$	.9774, 15°	Israel. A. C. P. 231, 197.
Mucamide	$C_6 H_{12} N_2 O_6$	1.589, 13°.5	Malaguti. C. R. 22, 854.
Benzamide	$N H_2 . C_7 H_5 O$	1.338, 4°	Schröder. Ber. 12, 1611.
"	"	1.344, 4°	
Amidobenzoic acid	$N H_2 . C_7 H_5 O_2$	1.506, 4°	" "
" "	"	1.515, 4°	
Amidomethylphenol	$C_7 H_9 N O$	1.108, 26°	Brunck. J. 20, 620.
Dimethylanisidine	$C_9 H_{13} N O$	1.016, 23°	Mühlhäuser. A. C. P. 207, 249.
Ethyl orthoamidophenetol	$C_{10} H_{15} N O$	1.021, 18°.3	Förster. J. P. C. (2), 21, 347.
Methylformanilide	$C_8 H_9 N O$	1.097, 18°	Pictet and Crépieux. Ber. 21, 1106.
Ethylformanilide	$C_9 H_{11} N O$	1.063, 16°	" "
Propylformanilide	$C_{10} H_{13} N O$	1.044, 16°	" "
Isoamylformanilide	$C_{12} H_{17} N O$	1.004, 16°	" "
Acetanilide	$C_8 H_9 N O$	1.099, 10°.5	Williams. J. 17, 424.
"	"	1.205, 4°	Schröder. Ber. 12, 1611.
"	"	1.216, 4°	
Benzanilide	$C_{13} H_{11} N O$	1.306, 4°	" "
"	"	1.321, 4°	
Oxethenaniline	$C_8 H_{11} N O$	1.11, 0°	Demole. J. C. S. (2), 12, 77.
a Ethylbenzhydroxamic acid.	$C_9 H_{11} N O_2$	1.209	Gürke. Ber. 14, 258.
β Ethylbenzhydroxamic acid.	"	1.185	Gürke. Ber. 14, 259.
Ethyl ethylbenzhydroxamate.	$C_{11} H_{15} N O_2$	1.0258, 17°	Gürke. Ber. 14, 257.
Ethyl *a* dibenzhydroxamate.	$C_{16} H_{15} N O_3$	1.2433, 18°.4	Gürke. Ber. 14, 258.
Ethyl *β* dibenzhydroxamate.	"	1.2395, 18°.4	" "
Tyrosine	$C_9 H_{11} N O_3$	1.456	Siber. Ber. 17, 2837.
Carbamide, or urea	$C H_4 N_2 O$	1.35	Proust.
" "	"	1.30, 12°	Bödeker. B. D. Z.
" "	"	1.35	Schabus.
" "	"	1.323, 4°	Schröder. Ber. 12, 561.
" "	"	1.333, 4°	
Ethyl carbamide	$C_3 H_8 N_2 O$	1.209	Two samples. Leuckart. J. P. C. (2), 21, 11.
" "	"	1.213, 18°	
Diethyl carbamide	$C_5 H_{12} N_2 O$	1.040	Schröder. Ber. 13, 1070.
" "	"	1.043	
Benzyl phenyl carbamide	$C_{14} H_{16} N_2 O$	.9168, 18°	Gladstone. Bei. 9, 249.
Ethyl carbamate, or urethane.	$C_3 H_7 N O_2$	.9862, 21°	Wurtz. J. 7, 565.

6th. Miscellaneous Cyanogen Compounds.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl cyanate	$C_2 H_5 . C N O$	1.1271, 15°	Cloëz. J. 10, 386.
Tertiary butyl cyanate	$C_4 H_9 . C N O$	.8676, 0°	Brauner. Ber. 12, 1875.
Cyanaldehyde	$C_2 H_3 O C N$	.881, 15°	Chautard. C. R. 106, 1168.
Ethyl cyanformate	$C_4 H_5 N O_2$	1.0139, 13°.5	Henry. C. R. 102, 768.
Ethyl cyanacetate	$C_5 H_7 N O_2$	1.0664, 13°.5	" "
Diisobutyryl dicyanide	$C_{10} H_{14} N_2 O_2$	.96	Moritz. J. C. S. 40, 13.
Ethylene cyanhydrin	$C_2 H_4 . O H . C N$	1.0588, 0°	Erlenmeyer. A. C. P. 191, 276.
Ethyl acetylcyanacetate	$C_7 H_9 N O_3$	1.102, 19°	Haller and Held. Ber. 15, 2363.
Ethyl methylacetylcyanacetate.	$C_8 H_{11} N O_3$	.996, 20°	Held. B. S. C. 41, 330.
Ethyl ethylacetylcyanacetate.	$C_9 H_{13} N O_3$	.976, 20°	" "
Ethoxyacetonitril	$C_4 H_7 N O$	.918, 6°	Henry. B. S. C. 20, 186.
"	"	.9093, 20°	Norton and Tscherniak.
Phenoxyacetonitril	$C_8 H_7 N O$	1.09, 17°.5	Fritzsche. Ber. 12, 2178.
Mandelic nitril	"	1.124	Völckel. P. A. 62, 444.
Hydroxisovaleronitril	$C_5 H_9 N O$	.95612, 0°	Lipp. A. C. P. 205, 26.
Hydroxycaprylonitril	$C_8 H_{15} N O$	.9048, 17°	Erlenmeyer and Sigel. A. C. P. 177, 107.
Triethoxyacetonitril	$C_8 H_{15} N O_3$	1.0030, 15°.5	Bauer. A. C. P. 229, 163.
Valeracetonitril	$C_{13} H_{24} N_2 O_3$	.79	Schlieper. A. C. P. 49, 19.
Acetoxyacetonitril	$C_4 H_5 N O_2$	1.1003, 13°.5	Henry. C. R. 102, 768.
Acetoxypropionitril	$C_5 H_7 N O_2$	1.077, 13°.5	" "
Cyanöil	$C_6 H_{11} N O$	1.009	Rossignon. A. C. P. 44, 301.

7th. Miscellaneous Compounds.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl carbimide	$C_3 H_5 N O$	.8981	Wurtz. J. 7, 564.
Phenyl carbimide	$C_7 H_5 N O$	1.092, 50°	Hofmann. P. R. S. 19, 108.
Ethylmethyl acetoxim	$C_4 H_9 N O$	.9195, 24°	Janny. Ber. 15, 2779.
Trimethylene diethylalkin	$C_7 H_{17} N O$	.9199, 4°	Berend. Ber. 17, 510.
Tetrethylallylalkin	$C_{11} H_{26} N_2 O$	.9002, 4°	" "
Methylphenylethylalkin	$C_9 H_{13} N O$	1.08065, 0°	Laun. Ber. 17, 676.
Piperpropylalkin	$C_8 H_{17} N O$	.9456, 0°	Laun. Ber. 17, 680.
Hydroxypicoline	$C_6 H_9 N O$	1.008, 13°	Etard. J. C. S. 40, 1046.
Collidine monocarbonic ether.	$C_{11} H_{15} N O_2$	1.0315, 15°	R. Michael. A. C. P. 225, 121.
Collidine dicarbonic ether	$C_{14} H_{19} N O_4$	1.087, 15°	Hantzsch. Ber. 15, 2913.
Nitroxylpiperidine	$C_5 H_{10} N_2 O$	1.0659, 15°.5	Wertheim. J. 16, 440.
Acetpiperidid	$C_7 H_{13} N O$	1.01106, 9°	Wallach and Kamensky. A. C. P. 214, 238.
Acetylcopellidine	$C_{10} H_{19} N O$	.9787, 0°	Dürkopf. Ber. 18, 924.
"	"	.9660, 21°	
Parachinanisol	$C_{10} H_9 N O$	1.1665, 0°	Skraup. Ber. 18, ref. 631.
"	"	1.1542, 20°	
"	"	1.1402, 50°	
Base from ethylamine camphorate.	$C_{14} H_{24} N_2 O$	1.0177, 15°	Wallach and Kamensky. A. C. P. 214, 245.
Uric acid	$C_5 H_4 N_4 O_3$	1.855	Schröder. Ber. 13, 1070.
" "	"	1.893	
Hippuric acid	$C_9 H_9 N O_3$	1.308, s.	Schabus. J. 3, 410.
Ethyl hippurate	$C_{11} H_{13} N O_3$	1.043, 23°, s.	Stenhouse. A. C. P. 31, 148.
Ethyl glycocholate	$C_{28} H_{47} N O_6$	.901	Springer. A. C. J. 1, 181.
Indigotine	$C_{16} H_{10} N_2 O_2$	1.35	Weltzien's "Zusammenstellung."
Creatine hydrate	$C_4 H_9 N_3 O_2 . H_2 O$	1.34	Watts' Dictionary.
" "	"	1.35	
Caffeine	$C_8 H_{10} N_4 O_2 . H_2 O$	1.23, 19°	Pfaff. Watts' Dict.
Piperine	$C_{17} H_{19} N O_3$	1.1931, 18°	Wackenroder. Watts' Dict.
Strychnine	$C_{21} H_{22} N_2 O_2$	1.359, 18°	F. W. Clarke.
"	"	1.13	Blunt. J. C. S. 50, 1047.
Morphine	$C_{17} H_{19} N O_3 . H_2 O$	1.317	Schröder. Ber. 13, 1070.
"	"	1.326	
Morphine butyrate	$C_{21} H_{27} N O_5$	1.215, 13°	Decharme. J. 16, 445.
Morphine oxalate	$C_{36} H_{38} N_2 O_9 . 2 H_2 O$	1.286, 15°	" "
Morphine lactate	$C_{20} H_{25} N O_6$	1.3574	" "
Codeine	$C_{18} H_{21} N O_3 . N_2 O$	1.300	Hunt. J. 8, 566.
"	"	1.311	Schröder. Ber. 13, 1070.
"	"	1.323	

Name.	Formula.	Sp. Gravity.	Authority.
Thebaine	$C_{19} H_{21} N O_3$	1.282	Schröder. Ber. 13, 1070.
"	"	1.305	
Laudanine	$C_{20} H_{25} N O_4$	1.255	" "
"	"	1.256	
Papaverine	$C_{21} H_{21} N O_4$	1.308	" "
"	"	1.317	
"	"	1.337	
Cryptopine	$C_{21} H_{23} N O_5$	1.351	" "
Narcotine	$C_{22} H_{23} N O_7$	1.374	" "
"	"	1.391	
"	"	1.395	
Pelletierine	$C_8 H_{15} N O$	.988, 0°	Tanret. Ber. 13, 1031.
Paraffinic acid	$C_{13} H_{26} N O_5$	1.14, 15°	Champion and Pellet. B.S.C. 18, 247.

XLIX. CHLORIDES, BROMIDES, AND IODIDES OF CARBON.

Name.	Formula.	Sp. Gravity.	Authority.
Carbon tetrachloride	$C Cl_4$	1.599	Regnault. Ann. (2), 71, 383.
" "	"	1.56	Kolbe. A. C. P. 54, 146.
" "	"	1.62983, 0°	Pierre. Ann. (3), 33, 210.
" "	"	1.567, 12°	Riche.
" "	"	1.5947, 20°	Haagen. P. A. 131, 117.
" "	"	1.4658, at the boiling p't.	Ramsay. J. C. S. 35, 463.
" "	"	1.63195, 0°	Thorpe. J. C. S. 37, 199.
" "	"	1.47999, 76°.74	
" "	"	1.6084, 9°.5	Schiff. G. C. I. 13, 177.
" "	"	1.4802, 75°.6	
" "	"	1.60500, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.58873, 25°	
Tetrachlorethylene	$C_2 Cl_4$	1.619, 20°	Regnault. Ann. (2), 71, 353.
"	"	1.6490, 0°	Pierre. Ann. (3), 33, 230.
"	"	1.612, 10°	Geuther. A. C. P. 107, 212.
"	"	1.6595, 0°	Bourgoin. Ber. 8, 548.
"	"	1.6190, 20°	Brühl. Bei. 4, 780.
"	"	1.6312, 9°.4	Schiff. G. C. I. 13, 177.
"	"	1.4434 120°	
"	"	1.4489 120°	
Hexchlorethane	$C_2 Cl_6$	1.619	Regnault. Ann. (2), 71, 374.
"	"	2.011	Schröder. Ber. 13, 1070.

Name.	Formula.	Sp. Gravity.	Authority.
Octochlorpropane	$C_3 Cl_8$	1.860	Cahours. J. 3, 496.
Hexchlorobenzene	$C_6 Cl_6$	1.585, 228°	Jungfleisch. J. 20, 86.
"	"	1.437, 317°	
"	"	1.569, 236°	M. 226°. B. 326°. Jungfleisch. J. 21, 354.
"	"	1.5191, 266°	
"	"	1.4624, 306°	
Thiocarbonyl chloride	$C S Cl_2$	1.46	Kolbe. A. C. P. 45, 41.
" "	"	1.5498, 0°	Claesson. Lund Arsskrift 1884–'5.
" "	"	1.5339, 11°	
" "	"	1.5241, 17°	
" "	"	1.05085, 15°	Billeter and Strohl. Ber. 21, 102.
Carbon tetrabromide	$C Br_4$	3.42, 14°	Bolas and Groves. J. C. S. 24, 780.
Carbon sulphobromide	$C S_2 Br_4$	2.88, 15°	Hell and Urech. Ber. 16, 1148.
Bromo-trichlormethane	$C Cl_3 Br$	2.058, 0°	Paterno. J. P. C. (2), 5, 99.
" "	"	2.017, 19°.5	
" "	"	1.842, 100°	
" "	"	2.05496, 0°	Thorpe. J. C. S. 37, 371.
" "	"	1.82446, 104°.07	
Dibrom-tetrachlorethane	$C_2 Cl_4 Br_2$	2.3, 21°	Malaguti. Ann. (3), 16, 24.
Dibrom-hexchlorpropane	$C_3 Cl_6 Br_2$	1.974	Cahours.
Carbon tetriodide	$C I_4$	4.32, 20°.2	Gustavson. C. R. 78, 1126.

L. COMPOUNDS CONTAINING C, CL, AND O.

Name.	Formula.	Sp. Gravity.	Authority.
Carbonyl chloride	$C O Cl_2$	1.432, 0°	Emmerling and Lengyel. Z. C. 13, 189.
" "	"	1.392, 18°.6	
Trichloracetyl chloride	$C_2 Cl_4 O$	1.603, 18°	Malaguti. Ann. (3), 16, 9.
" "	"	1.6564, 0°	Thorpe. J. C. S. 37, 371.
" "	"	1.44517, 118°	
Trichloracetic anhydride	$C_4 Cl_6 O_3$	1.6908, 20°	Anthoine. J. Ph. Ch. (5), 8, 417.
Tetrachlormethyl formate	$C_2 Cl_4 O_2$	1.724, 12°	Cahours. J. 1, 676.
" "	"	1.6525, 14°	Hentschel. J. P. C. (2), 36, 99.
Hexchlorethyl formate	$C_3 Cl_6 O_2$	1.705, 18°	Cloëz. Ann. (3), 17, 299.
Hexchlormethyl acetate	"	1.691, 18°	Cloëz. Ann. (3), 17, 312.
Perchlorethyl acetate	$C_4 Cl_8 O_2$	1.79, 25°	Léblanc. Ann. (3), 10, 202.
" "	"	1.78, 22°	Léblanc. Ann. (3), 10, 208.

Name.	Formula.	Sp. Gravity.	Authority.
Hexchlormethyl oxide	$C_2 Cl_6 O$	1.594	Regnault. Ann. (2), 71, 403.
Perchlorethyl oxide	$C_4 Cl_{10} O$	1.9, 14°.5	Malaguti. Ann. (3), 16, 14.
Hexchloracetone	$C_3 Cl_6 O$	1.75, 10°	Plantamour.
"	"	1.744, 12°	Cloëz. Ann. (6), 9, 145.
Chloroxethose	$C_4 Cl_6 O$	1.654, 21°	Malaguti. Ann. (3), 16, 20.
Derivative of sodium citrate.	$C_5 Cl_{10} O_2$	1.66	Watts' Dictionary.
By action of $P Cl_5$ on succinyl chloride.	$C_4 Cl_6 O$	1.634	Kauder. J. P. C. (2), 28, 191.

LI. COMPOUNDS CONTAINING C, H, AND CL.

1st. Chlorides of the Paraffin Series.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl chloride	$C H_3 Cl$	.99145, 25°.7	Vincent and Delachanal. Bei. 3, 332.
" "	"	.95231, 0°	
" "	"	.92880, 13°.4	
" "	"	.91969, 17°.9	
" "	"	.90875, 23°.8	
" "	"	.89638, 30°.2	
" "	"	.97886, 39°	
Ethyl chloride	$C_2 H_5 Cl$	.874, 5°	Thénard.
" "	"	.92138, 0°	Pierre. C. R. 27, 213.
" "	"	.9253, 0°	Darling. J. 21, 328.
" "	"	.9176, 8°	Linnemann. A.C.P. 160, 195.
" "	"	.8510, 12°	Ramsay. J. C. S. 35, 463.
" "	"	.92295, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.91708, 25°	
Propyl chloride	$C_3 H_7 Cl$	.9156, 0°	Pierre and Puchot. Ann. (4), 22, 281.
" "	"	.8918, 19°.75	
" "	"	.8671, 39°	
" "	"	.9160, 18°	Linnemann. A.C.P. 161, 38 and 39.
" "	"	.8959, 19°	
" "	"	.8877, 14°	De Heen. Bei. 5, 105.
" "	"	.9123, 0°	Zander. A.C.P. 214, 181.
" "	"	.8536, 46°.5	
" "	"	.8561, 46°	Schiff. G. C. I. 13, 177.
" "	"	.8898, 20°	Brühl. Bei. 4, 778.
" "	"	.89296, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.88125, 25°	
Isopropyl chloride	"	.874, 10°	Linnemann.
" "	"	.8722, 14°	Linnemann. A. C. P. 161, 18.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isopropyl chloride	C_3H_7Cl	.8825, 0°	Zander. A.C.P. 214, 181.
" "	"	.8326, 36°.5	
" "	"	.86884, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.85750, 25°	
Butyl chloride	C_4H_9Cl	.880	Gerhard. J. 15, 409.
" "	"	.9074, 0°	Lieben and Rossi. A. C. P. 158, 137.
" "	"	.8874, 20°	
" "	"	.8972, 14°	Linnemann. Ann. (4), 27, 268.
" "	"	.8094, bp	Ramsay. J. C. S. 35, 463.
" "	"	.8794, 14°	De Heen. Bei. 5, 105.
Isobutyl chloride	"	.8953, 0°	Pierre and Puchot. Ann. (4), 22, 310.
" "	"	.8651, 27°.8	
" "	"	.8281, 59°	
" "	"	.8798, 15°	Linnemann. A. C. P. 162, 1.
" "	"	.8626, 19°	Gladstone. Bei. 9, 249.
" "	"	.8078, 68°	Schiff. Bei. 9, 559.
" "	"	.88356, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.87393, 25°	
Trimethylcarbyl chloride	"	.8658, 0°	Puchot. Ann. (5), 28, 549.
" "	"	.84712, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.83683, 25°	
Normal pentyl chloride	$C_5H_{11}Cl$	.9013, 0°	Lieben and Rossi. A. C. P. 159, 70.
" " "	"	.8834, 20°	
" " "	"	.8680, 40°	
" " "	"	.8732, 20°	Lachowicz. A. C. P. 220, 191.
Amyl chloride	"	.8859, 0°	Kopp. A. C. P. 95, 307.
" "	"	.8625, 25°.1	
" "	"	.89584, 0°	Pierre. C. R. 27, 213.
" "	"	.8750 } 20°	Two products. Schorlemmer. J. 19, 527.
" "	"	.8777 } 20°	
" "	"	.7801, bp	Ramsay. J. S. C. 35, 463.
" "	"	.8716, 14°	De Heen. Bei. 5, 105.
" "	"	.8703, 20°	Lachowicz. A. C. P. 220, 190.
" "	"	.7903, 99°.5	Schiff. Ber. 19, 560.
" "	"	.88006, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.87164, 25°	
" " Active	"	.886	Le Bel. B. S. C. 25, 546.
" " Inactive	"	.8928, 0°	Balbiano. Ber. 9, 1437.
Methylpropylcarbyl chloride.	"	.912, 0°	Wagner and Saytzeff. A. C. P. 179, 321.
" "	"	.891, 21°	
Diethylcarbyl chloride	"	.916, 0°	" "
" "	"	.895, 21°	
Dimethylethylcarbyl chloride.	"	.883, 0°	Wurtz. J. 16, 516.
" "	"	.889, 0°	Wischnegradsky. A.C.P. 190, 334–336.
" "	"	.870, 19°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Dimethylethylcarbyl chloride.	$C_5H_{11}Cl$	.87086, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.86219, 25°	
Hexyl chloride	$C_6H_{13}Cl$	.892, 16°	Pelouze and Cahours. J. 16, 525.
" "	"	.892, 23°	Geibel and Buff. J. 21, 336.
" "	"	.895, 13°	Cahours and Demarçay. C. R. 80, 1570.
Secondary hexyl chloride	"	.871, 24°	Domac. Ber. 14, 1712.
Chloride from tetramethylethane.	"	.8943, 14°	Schorlemmer. J. 20, 567.
" " "	"	.8874, 22°	
" " "	"	.8759, 34°	
Dimethylisopropylcarbyl chloride.	"	.8966, 0°	Pawlow. A. C. P. 196, 122.
"	"	.8784, 19°	
Pinacolyl chloride	"	.8991, 0°	Friedel and Silva. J. C. S. (2), 11, 488.
Heptyl chloride	$C_7H_{15}Cl$	.9983, 15°	Petersen. J. 14, 618.
" "	"	.890, 20°	Pelouze and Cahours. J. 15, 386.
" "	"	.8737, 18°.5	Two preparations. Schorlemmer. A. C. P. 136, 257.
" "	"	.8725, 20°	
" "	"	.8965, 19°	
" "	"	.891, 19°	Schorlemmer.
" "	"	.881, 16°	Cross. J. C. S. 32, 123.
Isoheptyl chloride	"	.8814, 16°.5	Schorlemmer. A. C. P. 136, 257.
" "	"	.8780, 18°.5	
" "	"	.8757, 22°	
Octyl chloride	$C_8H_{17}Cl$	.892, 18°	Schorlemmer. J. 15, 386.
" "	"	.895, 16°	Pelouze and Cahours. J. 16, 528.
" "	"	.8802, 16°	Zincke. A. C. P. 152, 5.
" "	"	.850	Cahours and Demarçay. C. R. 80, 1571.
" "	"	.87857, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.87192, 25°	
Isoöctyl chloride	"	.8834, 10°.5	Schorlemmer. J. 20, 567.
" "	"	.8617, 36°	
Methylhexylcarbyl chloride.	"	.87075, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	.86388, 25°	
Nonyl chloride. B. 196°	$C_9H_{19}Cl$	.899, 16°	Pelouze and Cahours. J. 16, 529.
" "	"	.8962, 14°	Thorpe and Young. A. C. P. 165, 1.
" " B. 182°	"	.911, 23°	Lemoine. B. S. C. 41, 161.
" "	"	.908, 25°.8	
Decatyl chloride	$C_{10}H_{21}Cl$	.908, 19°	" "
Dodecatyl chloride	$C_{12}H_{25}Cl$	.983, 22°	Pelouze and Cahours. J. 16, 530.
Cetyl chloride	$C_{16}H_{33}Cl$	.8412, 12°	Tüttscheff. J. 13, 406.

2d. Chlorides of the Series $C_n H_{2n} Cl_2$.

Name.	Formula.	Sp. Gravity.	Authority.
Methylene chloride	$C H_2 Cl_2$	1.344, 18°	Regnault. Ann. (2), 71, 378.
" "	"	1.360, 0°	Butlerow. J. 22, 343.
" "	"	1.377765, 0°	Thorpe. J. C. S. 37, 371.
" "	"	1.30093, 41°.6	
" "	"	1.33771, 15°	Perkin. J. P. C. (2). 32, 523.
" "	"	1.32197, 25°	
Ethylene chloride	$C_2 H_4 Cl_2$	1.256, 12°	Regnault. Ann. (2), 58, 307.
" "	"	1.247, 18°	Liebig. A.C.P. 214.
" "	"	1.28034, 0°	Pierre. C. R. 27, 213.
" "	"	1.2562, 20°	Haagen. P. A. 131, 117.
" "	"	1.26, 14°	Maumené. J. 22, 346.
" "	"	1.272, 14°	Gladstone and Tribe. C. N. 29, 212.
" "	"	1.1356, 84°	Ramsay. J. C. S. 35, 463.
" "	"	1.28082, 0°	Thorpe. J. C. S. 37, 371.
" "	"	1.15635, 83°.5	
" "	"	1.2521, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.1576, 83°.2	Schiff. Ber. 15, 2973.
" "	"	1.2656, 9°.8	Schiff. G. C. I. 13, 177.
" "	"	1.1576, 83°.3	
" "	"	1.272, 14°	Gladstone. Bei. 9, 249.
" "	"	1.25991, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.24800, 25°	
" "	"	1.25014, 20°	Weegmann. Z. P. C. 2, 218.
Ethylidene chloride	"	1.174, 17°	Regnault. Ann. (2), 71, 357.
" "	"	1.24074, 0°	Pierre. C. R. 27, 213.
" "	"	1.189, 4°.3	Geuther. J. 11, 289.
" "	"	1.198, 6°.5	Darling. J. 21, 329.
" "	"	1.201, 13°	Gladstone and Tribe. C. N. 29, 212.
" "	"	1.1743, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.1070, 56°	Ramsay. J. C. S. 35, 463.
" "	"	1.20394, 0°	Two samples. Thorpe. J. C. S. 37, 183 and 371.
" "	"	1.10923, 59°.9	
" "	"	1.2049, 0°	
" "	"	1.1895, 9°.8	Schiff. G. C. I. 13, 177.
" "	"	1.11425, 56°.7	
" "	"	1.11555, 56°.5	
" "	"	1.18450, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.17120, 25°	
" "	"	1.17503, 20°	Weegmann. Z. P. C. 2, 218.
Propylene chloride	$C_3 H_6 Cl_2$	1.151	Cahours. J. 3, 496.

Name.	Formula.	Sp. Gravity.	Authority.
Propylene chloride	$C_3H_6Cl_2$	1.1656, 14°	Linnemann. A. C. P. 161, 18.
" "	"	1.184, 0°	Friedel and Silva. Z. C. 14, 489.
" "	"	1.155, 25°	
" "	"	1.182, 0°	
" "	"	1.153, 25°	
" "	"	1.0470, 97°.5	Schiff. Bei. 9, 559.
Trimethylene chloride	"	1.201, 15°	Reboul. J. C. S. 36, 127.
" "	"	1.1896, 17°.6	Freund. Ber. 14, 2270.
Dimethylmethylene chloride. Methylchloracetol.	"	1.117, 0°	Friedel.
" "	"	1.06, 16°	Linnemann. A. C. P. 138, 125.
" "	"	1.0827, 16°	Linnemann. A. C. P. 161, 18.
" "	"	1.1058, 0°	Friedel and Silva. Z. C. 14, 489.
" "	"	1.0744, 25°	
" "	"	1.1125, 0°	
" "	"	1.0818, 25°	
" "	"	1.09620 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.09657 15°	
" "	"	1.08430 25°	
" "	"	1.08476 25°	
Propylidene chloride	"	1.143, 10°	Reboul. C. R. 82, 378.
Isobutylene chloride	$C_4H_8Cl_2$	1.112, 18°	Kolbe. J. 2, 338.
" "	"	1.0953, 0°	Kopp. A. C. P. 95, 307.
" "	"	1.0751, 20°.7	
Isobutylidene chloride	"	1.0111, 12°	Oeconomides. Ber. 14, 1201.
Amylene chloride	$C_5H_{10}Cl_2$	1.058, 9°	Guthrie. J. 14, 665.
" "	"	1.2219, 0°	Bauer. J. 19, 531.
Isoamylidene chloride	"	1.05, 24°	Ebersbach. J. 11, 297.
Chloramyl chloride	"	1.194, 0°	Buff. J. 21, 333.
Hexylene chloride. B. 180°	$C_6H_{12}Cl_2$	1.087, 20°	Pelouze and Cahours. J. 16, 525.
" " B. 163°	"	1.0527, 11°	Henry. C. R. 97, 260.
Heptylene chloride	$C_7H_{14}Cl_2$	1.0295, 10°	Husemann. B. D. Z.

3d. Miscellaneous Non-Aromatic Chlorides.

Name.	Formula.	Sp. Gravity.	Authority.
Chloroform	$C H Cl_3$	1.48, 18°	Liebig. A. C. P. 1, 199.
"	"	1.491, 17°	Regnault. Ann. (2), 71, 381.
"	"	1.493	Swan. J. 1, 681.
"	"	1.497	Swan. J. 1, 681.
"	"	1.413	Soubeiran and Mialhe. J. 2, 408.
"	"	1.496, 12°	Soubeiran and Mialhe. J. 2, 408.
"	"	1.500, 15°.5	Gregory. J. 3, 454.
"	"	1.52523, 0°	Pierre. C. R. 27, 213.
"	"	1.512, 12°	Schiff. A. C. P. 107, 63.
"	"	1.49	Flückiger.
"	"	1.472, 16°.5	Geuther.
"	"	1.507, 17°	Flückiger. Z. A. C. 5, 302.
"	"	1.502	Rump. C. C. (3), 6, 34.
"	"	1.500, 15°	Remys. J. C. S. (2), 13, 439.
"	"	1.3954, 63°	Ramsay. J. C. S. 35, 463.
"	"	1.52657, 0°	Thorpe. J. C. S. 37, 371.
"	"	1.40877, 61°.2	Thorpe. J. C. S. 37, 371.
"	"	1.4018, 63°	Schiff. Ber. 14, 2763–2766.
"	"	1.40814, 63°	Schiff. Ber. 14, 2763–2766.
"	"	1.4081, 60°.6	Schiff. Ber. 15, 2972.
"	"	1.49089, 29°	Nasini. G. C. I. 13, 135.
"	"	1.5039, 11°.8	Schiff. G. C. I. 13, 177.
"	"	1.4081, 60°.9	Schiff. G. C. I. 13, 177.
"	"	1.48978, 18°.58	With intermediate values. Drecker. P. A. (2), 20, 870.
"	"	1.45695, 35°.86	With intermediate values. Drecker. P. A. (2), 20, 870.
"	"	1.50027, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	1.50085, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	1.48432, 25°	Perkin. J. P. C. (2), 32, 523.
"	"	1.48492, 25°	Perkin. J. P. C. (2), 32, 523.
Trichlorethane	$C H_3 . C Cl_3$	1.372, 16°	Regnault. Ann. (2), 71, 364.
"	"	1.34651, 0°	Pierre. C. R. 27, 213.
"	"	1.32466, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	1.31144, 25°	Perkin. J. P. C. (2), 32, 523.
Chlorethylene dichloride	$C H_2 Cl. C H Cl_2$	1.422, 17°	Regnault. Ann. (2), 69, 153.
" "	"	1.42234, 0°	Pierre. C. R. 27, 213.
" "	"	1.4577, 9°.4	Schiff. G. C. I. 13, 177.
" "	"	1.2943, 113°.5	Schiff. G. C. I. 13, 177.
" "	"	1.2946, 113°.5	Schiff. G. C. I. 13, 177.
" "	"	1.2947, 113°.5	Schiff. G. C. I. 13, 177.
" "	"	1.391	Delacre. Bull. Acad. Belg. (3), 13, 250.
" "	"	1.45527, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.44303, 25°	Perkin. J. P. C. (2), 32, 523.

Name.	Formula.	Sp. Gravity.	Authority.
Tetrachlorethane. B. 102°	$C H_2 Cl. C Cl_3$	1.530, 17°	Regnault. Ann. (2), 71, 366.
" B. 135°	"	1.576, 19°	Regnault. Ann. (2), 68, 162.
"	"	1.61158, 0°	Pierre. C. R. 27, 213.
Acetylene tetrachloride	$C H Cl_2. C H Cl_2$	1.614, 0°	Paterno and Pisati. Z. C. 14, 385.
" "	"	1.578, 24°.8	
" "	"	1.522, 100°.1	
Pentachlorethane	$C H Cl_2. C Cl_3$	1.644	Regnault. Ann. (2), 71, 368.
"	"	1.66267, 0°	Pierre. C. R. 27, 213.
"	"	1.71, 0°	Paterno. Z. C. 12, 245.
"	"	1.69, 13°	
"	"	1.70893, 0°	Thorpe. J. C. S. 37, 371.
"	"	1.46052, 159°.1	
Dichlorethylene	$C_2 H_2 Cl_2$	1.250, 15°	Regnault. Ann (2), 69, 155.
Trichlorpropane	$C_3 H_5 Cl_3$	1.347	Cahours. J. 3, 496.
Trichlorhydrin	$CH_2Cl. CHCl. CH_2Cl$	1.41, 0°	Three separate products. Linnemann. A. C. P. 136, 51.
"	"	1.40, 8°	
"	"	1.417, 15°	
"	"	1.41, 0°	Oppenheim. J. 19, 521.
"	"	1.39805 15°	Perkin. J. P. C. (2), 32, 528.
"	"	1.39836 15°	
"	"	1.38753 25°	
"	"	1.38783 25°	
Isotrichlorhydrin	$CH_2Cl. CH_2. CHCl_2$	1.362, 15°	Romburgh. Ber. 14, 1400.
Allylene tetrachloride	$C_3 H_4 Cl_4$	1.47, 13°	Borsche and Fittig. J. 18, 313.
" "	"	1.482	Ganswindt. Jena Inaug. Diss. 1873.
" "	"	1.485	
Tetrachlorglycide	"	1.496, 17°	Pfeffer and Fittig. J. 18, 504.
Allylidene tetrachloride	"	1.503, 17°.5	Hartenstein. J. P. C. (2), 7, 295.
" "	"	1.522, 15°	Romburgh. Ber. 14, 1400.
Tetrachlorpropane	"	1.548	Cahours. J. 3, 496.
"	"	1.55, s.	Berthelot.
Hexachlorpropane	$C_3 H_2 Cl_6$	1.626	Cahours. J. 3, 496.
Heptachlorpropane	$C_3 H Cl_7$	1.731	" "
Chloropropylene	$C_3 H_5 Cl$	.918, 9°	Linnemann. J. 19, 308.
"	"	.9307, 0°	Oppenheim. J. 19, 521.
"	"	.931, 0°	Oppenheim. J. 21, 339.
Allyl chloride	"	.934, 0°	Oppenheim. J. 19, 521.
" "	"	.9547, 0°	Tollens. A. C. P. 156, 155.
" "	"	.9610, 0°	Zander. A. C. P. 214, 181.
" "	"	.9002, 46°	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl chloride	$C_3 H_5 Cl$	.9055 } 44°.8	{ Schiff. G. C. I. 13, 177.
" "	"	.9058 }	
" "	"	.9379, 20°	Brühl. Bei. 4, 780.
" "	"	.94366, 15° }	Perkin. J. P. C. (2), 32, 523.
" "	"	.93228, 25° }	
Allylidene dichloride	$C_3 H_4 Cl_2$	1.170, 24°.5	Hübner and Geuther. J. 13, 305.
a Dichlorpropylene. Epidichlorhydrin.	"	1.21	Claus. A. C. P. 170, 125.
" "	"	1.22, 8°	Henry. Ber. 5, 965.
β Dichlorpropylene. Epidichlorhydrin.	"	1.21, 20°	Reboul. J. 13, 460.
" "	"	1.233, 17°.5	Hartenstein. J. P. C. (2), 7, 295.
" "	"	1.226, 15°	Romburgh. Ber. 15, 245.
" "	"	1.25, 15° }	{ Friedel and Silva. Quoted by Romburgh.
" "	"	1.218, 25° }	
a Trichlorpropylene	$C_3 H_3 Cl_3$	1.387, 14°	Borsche and Fittig. J. 18, 313.
β Trichlorpropylene	"	1.414, 20°	Pfeffer and Fittig. J. 18, 504.
Propargyl chloride	$C_3 H_3 Cl$	1.0454, 5°	Henry. Ber. 8, 398.
Crotonylene dichloride	$C_4 H_6 Cl_2$	1.131	Kekulé. J. 22, 507.
Chlorisobutylene	$C_4 H_7 Cl$	.9785, 12°	Oeconomides. Ber. 14, 1201.
Trichlorpentane	$C_5 H_9 Cl_3$	1.33, 13°	Buff. J. 21, 334.
Tetrachlorpentane	$C_5 H_8 Cl_4$	2.4292	Bauer. J. 19, 531.
Chloramylene	$C_5 H_9 Cl$	.9992, 0°	" "
"	"	.872, 5°.1	Bruylants. Ber. 8, 411.
Isoprene hydrochlorate	"	.868, 16°	Bouchardat. J. C. S. 38, 323.
Isoprene dichloride	$C_5 H_8 Cl_2$	1.065, 16°	" "
Trichlorhexane	$C_6 H_{11} Cl_3$	1.193, 21°	Pelouze and Cahours. J. 16, 525.
Hexachlorhexane	$C_6 H_8 Cl_6$	1.598, 20°	" "
Chlorhexylene	$C_6 H_{11} Cl$	.9036, 11°	Henry. C. R. 97, 260.
Chlordiallyl	$C_6 H_9 Cl$	.9197, 18°.2	Henry. J. C. S. 36, 34.
Chlordiamylene chloride	$C_{10} H_{19} Cl_3$	1.1638, 0°	Bauer. J. 20, 583.
Eikosylene chloride	$C_{20} H_{38} Cl_2$	1.013, 24°	Lippmann and Hawliczek. Ber. 12, 78.
Isovinyl chloride	$(C_2 H_3 Cl)_n$	1.406	Baumann. A. C. P. 163, 308.
Chloronicene	$C_5 H_5 Cl$	1.141, 10°	St. Evre. J. 1, 530.

4th. Aromatic Compounds.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Monochlorbenzene	C_6H_5Cl	1.1499, 0°	From benzene. Sokoloff. J. 18, 517.
"	"	1.1347, 10°	
"	"	1.1258, 20°	
"	"	1.1188, 30°	
"	"	1.1199, 0°	From phenol. Sokoloff. J. 18, 517.
"	"	1.1085, 10°	
"	"	1.099, 20°	
"	"	1.092, 30°	
"	"	1.118	Jungfleisch. J. 19, 551.
"	"	1.77, —40°	Jungfleisch. J. 20, 36.
"	"	.980. 133°	
"	"	1.1293, 0°	Jungfleisch. J. 21, 343.
"	"	1.12855, 0°	From benzene. Adrieenz. Ber. 6, 443.
"	"	1.11807, 9°.79	
"	"	1.10467, 22°.43	
"	"	1.04428, 77°.27	
"	"	1.12818, 0°	From phenol. Adrieenz. Ber. 6, 443.
"	"	1.11421, 9°.79	
"	"	1.10577, 22°.43	
"	"	1.04299, 77°.27	
"	"	.9817 132°	Schiff. G. C. I. 13, 177.
"	"	.9818	
"	"	1.1066, 20°	Brühl. Bei. 4, 780.
"	"	1.1046, 25°.2	Schall. Ber. 17, 2564.
"	"	1.0703, 52°.3	
"	"	1.106, 15°	Wallach and Heusler. A. C. P. 243, 226.
Orthodichlorbenzene	$C_6H_4Cl_2$	1.3278, 0°	Beilstein and Kurbatow. A. C. P. 176, 41.
"	"	1.3254, 0°	Friedel and Crafts. Ann. (6), 10, 416.
Metadichlorbenzene	"	1.3148	Beilstein and Kurbatow. B. S. C. 23, 179.
"	"	1.307, 0°	Beilstein and Kurbatow. J. C. S. (2), 13, 450.
Paradichlorbenzene	"	1.459, s.	Jungfleisch. J. 19, 551.
"	"	1.250, 53°	Jungfleisch. J. 20, 36.
"	"	1.123, 171°	
"	"	1.4581, 20°.5	Jungfleisch. J. 21, 347.
"	"	1.241, 63°	
"	"	1.2062, 93°	
"	"	1.1366, 166°	
"	"	1.467, 4°	Schröder. Ber. 12, 561.
"	"	1.2499, 55°.1	Schiff. A. C. P. 223, 247.

Name.	Formula.	Sp. Gravity.	Authority.
Trichlorbenzene	$C_6 H_3 Cl_3$	1.457, 7°	Mitscherlich. P. A. 35, 372.
" 1.3.4	"	1.575	Jungfleisch. J. 19, 551.
" "	"	1.457, 17°, s.	Jungfleisch. J. 20, 36.
" "	"	1.227, 206°	
" "	"	1.574, 10°, s.	Jungfleisch. J. 21, 350.
" "	"	1.4658, 10°, l.	
" "	"	1.4460, 26°	
" "	"	1.4111, 56°	
" "	"	1.2427, 196°	
" "	"	1.4654, 12°, l.	Beilstein and Kurbatow. A. C. P. 192, 230.
Tetrachlorbenzene. 1.2.4.5	$C_6 H_2 Cl_4$	1.748	Jungfleisch. J. 19, 551.
" "	"	1.448, 139°	Jungfleisch. J. 20, 36.
" "	"	1.315, 240°	
" "	"	1.7344, 10°, s.	Jungfleisch. J. 21, 352.
" "	"	1.4339, 149°	
" "	"	1.3958, 179°	
" "	"	1.3281, 230°	
Pentachlorbenzene	$C_6 H Cl_5$	1.625, 74°	Jungfleisch. J. 20, 36.
"	"	1.370, 270°	
"	"	1.8422, 10°	Jungfleisch. J. 21, 353.
"	"	1.8342, 16°.5	
"	"	1.6091, 84°	
"	"	1.5732, 114°	
"	"	1.3824, 261°	
Monochlortoluene	$C_6 H_4 . C H_3 . Cl$	1.080, 14°	Limpricht. J. 19, 591.
" 1.4	"	1.0735, 27°.2	Aronheim and Dietrich. Ber. 8, 1402.
" "	"	.9351, 159°.8	Schiff. G. C. I. 13, 177.
"	"	1.072, 24°.44	Cattaneo. Bei. 7, 584.
"	"	1.061, 35°.48	
"	"	1.049, 48°.71	
"	"	1.029, 67°.80	
"	"	1.013, 83°.86	
"	"	?.796, 99°.81	
"	"	1.0761, 19°	Gladstone. Bei. 9, 249.
Benzyl chloride	$C_6 H_5 . C H_2 Cl$	1.1131	Cannizzaro. J. 8, 621.
" "	"	1.1179	
" "	"	1.107, 14°	Limpricht. J. 19, 592.
" "	"	.9452 175°	Schiff. G. C. I. 13, 177.
" "	"	.9453 175°	
" "	"	1.100, 30°.01	Cattaneo. Bei. 7, 584.
" "	"	1.082, 44°.37	
" "	"	1.066, 59°	
" "	"	1.047, 75°	
" "	"	1.016, 100°.08	
" "	"	1.099, 7°	Gladstone. Bei. 9, 249.
" "	"	.9453, 178°	Schiff. G. C. I. 13, 177.

Name.	Formula.	Sp. Gravity.	Authority.
Dichlortoluene. 1.2.4	$C_6H_3.CH_3.Cl_2$	1.24597, 20°	Lellmann and Klotz. A. C. P. 231, 308.
" 1.2.5	"	1.2585, 20°	" "
" 1.3.4	"	1.2518, 16°	Aronheim and Dietrich. Ber. 8, 1408.
" "	"	1.2596, 18°.4	
" "	"	1.2512, 20°	Lellmann and Klotz. A. C. P. 231, 308.
" B. 202°	"	1.256, 13°	Beilstein. J. 13, 412.
" B. 207°	"	1.2557, 14°	Limpricht. J. 19, 593.
Benzylidene dichloride	$C_6H_5.CHCl_2$	1.245, 16°	Cahours. J. 1, 711.
" "	"	1.295, 16°	Hübner and Bente. Ber. 6, 804.
" "	"	1.2699, 0°	Schiff. Ber. 19, 563.
" "	"	1.2122, 56°.8	
" "	"	1.1877, 79°.2	
" "	"	1.1257, 135°.5	
" "	"	1.0407, 203°.5	
Trichlortoluene	$C_6H_2.CH_3.Cl_3$	1.413, 9°	Henry. J. 22, 508.
"	"	1.4093, 19°.5	Aronheim and Dietrich. Ber. 8, 1405.
Dichlorbenzyl chloride	$C_6H_3Cl_2.CH_2Cl$	1.44, 0°	Naquet. J. 15, 419.
Benzyl trichloride	$C_6H_5.CCl_3$	1.61, 13°	Limpricht. J. 18, 538.
" "	"	1.380, 14°	Limpricht. J. 19, 594.
Tetrachlortoluene	$C_6HCl_4.CH_3$	1.495, 14°	Limpricht. J. 19, 595.
Trichlorbenzyl chloride	$C_6H_2Cl_3.CH_2Cl$	1.547, 23°	Beilstein and Kuhlberg. J. 21, 361.
Orthodichlorbenzylene dichloride.	$C_6H_3Cl_2.CHCl_2$	1.518, 22°	" "
Chlorbenzo-trichloride. 1.3	$C_6H_4Cl.CCl_3$	1.74, 13°	Limpricht. A. C. P. 134, 58.
" "	"	1.76, 13°	
" " 1.2	"	1.51	Kolbe and Lautemann. A. C. P. 115, 196.
Dichlorbenzo-trichloride	$C_6H_3Cl_2.CCl_3$	1.587, 21°	Beilstein and Kuhlberg. Z. C. 21, 363.
" "	"	1.5829, 16°	Aronheim and Dietrich. Ber. 8, 1408.
Trichlorbenzylene dichloride.	$C_6H_2Cl_3.CHCl_2$	1.607, 22°	Beilstein and Kuhlberg. Z. C. 21, 362.
Tetrachlorbenzyl chloride	$C_6HCl_4.CH_2Cl$	1.634, 25°	" "
Tetrachlorbenzylene dichloride.	$C_6HCl_4.CHCl_2$	1.704, 25°	Beilstein and Kuhlberg. Z. C. 21, 364.
Chlororthoxylene	$C_6H_3.CH_3.CH_3.Cl$	1.0863, 19°	Claus and Kautz. Ber. 18, 1367.
" 1.2.4	"	1.0692, 15°	Krüger. Ber. 18, 1757.
Chlormetaxylene. 1.3.4	"	1.0598, 20°	Jacobsen. Ber. 18, 1761.
Isotolyl chloride	$C_6H_4.CH_3.CH_2Cl$	1.079, 0°	Gundelach. B. S. C. 25, 885.
" "	"	1.064, 20°	
Chlorethylbenzene	$C_6H_4.C_2H_5.Cl$	1.075, 0°	Istrati. B. S. C. 42, 115.

Name.	Formula.	Sp. Gravity.	Authority.
Chlorethylbenzene	$C_6H_4.C_2H_5.Cl$	1.068	Istrati. Ber. 18, ref. 704.
Dichlororthoxylene	$C_6H_2.CH_3.CH_3.Cl_2$	1.333, s.	Colson. Ann. (6), 6, 86.
"	"	1.150, 70°, l.	
"	"	1.250, 20°, l.	
"	"	1.0980	Kautz. Freiburg In. Diss. 1885.
Dichlormetaxylene	"	1.302, 20°, s.	Colson. Ann. (6), 6, 86.
"	"	1.202, 40°, l.	
Dichlorparaxylene	"	1.343, s.	" "
Orthoxylene dichloride	$C_6H_4(CH_2Cl)_2$	1.393	Colson. C. R. 104, 429.
Metaxylene dichloride	"	1.370	" "
Paraxylene dichloride	"	1.417	" "
Orthoxylene tetrachloride	$C_6H_4(CHCl_2)_2$	1.601	" "
Metaxylene tetrachloride	"	1.536	Colson and Gautier. C. R. 102, 689.
Paraxylene tetrachloride	"	1.606	" "
Chlorcymene. 1.4.6	$C_6H_3.CH_3.C_3H_7.Cl$	1.014, 14°	Gerichten. Ber. 10, 1249.
Diethylmonochlorbenzene	$C_6H_3.Cl.(C_2H_5)_2$	1.036	Istrati. Ber. 18, ref. 704.
Triethylmonochlorbenzene.	$C_6H_2.Cl.(C_2H_5)_3$	1.028	" "
Tetrethylmonochlorbenzene.	$C_6H.Cl.(C_2H_5)_4$	1.022	" "
Pentethylmonochlorbenzene.	$C_6Cl(C_2H_5)_5$	1.065	" "
β Chlorstyrolene	C_8H_7Cl	2.112, 22°.3	Glaser. A. C. P. 154, 166.
β Benzene hexchloride	$C_6H_6Cl_6$	1.89, 19°	Meunier. Ann. (6), 10, 223.
By action of ethylene on monochlorbenzene.	C_9H_9Cl	1.179	Istrati. Ber. 18, ref. 704.
α Chlornaphthalene	$C_{10}H_7Cl$	1.2052, 6°.2	Laurent. Quoted by Carius.
"	"	1.2028, 6°.4	Carius. A. C. P. 114, 146.
"	"	1.2025, 15°	Koninck and Marquart. C. N. 25, 57.
β Chlornaphthalene	"	1.2656, 16°	Rimarenko. Ber. 9, 664.
Naphthalene dichloride	$C_{10}H_8Cl_2$	1.287, 12°.5	Gladstone. Bei. 9, 249.
" "	"	1.2648, 18°	
Trichloracenaphtene	$C_{12}H_7Cl_3$	1.43, 17°	Kebler and Norton. A. C. J. 10, 218.
Camphryl chloride	$C_9H_{13}Cl$	1.038, 14°	Schwanert. J. 15, 465.
Geraniol hydrochlorate	$C_{10}H_{17}Cl$	1.020, 20°	Jacobsen. A. C. P. 157, 236.
Caoutchin hydrochlorate	"	1.433	Watts' Dictionary.
From terpene of Pinus pumilio.	"	.982, 17°	Buchner. J. 13, 479.
Terebenthene hydrochlorate.	"	1.016, 0°	Two isomers. Barbier. C. R. 96, 1066.
" "	"	1.017, 0°	

Name.	Formula.	Sp. Gravity.	Authority.
Isoterebenthene hydrochlorate.	$C_{10}H_{17}Cl$	.9927, 0°	Riban. C. R. 79, 225.
From terpene of Muscat nut oil.	"	.9827, 15°	Cloëz. J. 17, 586.

LII. COMPOUNDS CONTAINING C, H, O, AND CL.

Name.	Formula.	Sp. Gravity.	Authority.
Dichlorethyl alcohol	$C_2H_4Cl_2O$	1.145, 15°	Delacre. Bull. Acad. Belg. (3), 13, 248.
Trichlorethyl alcohol	$C_2H_3Cl_3O$	1.55, 23°.3	Garzarolli-Thurnlackh. Ber. 14, 2826.
Dichlorhexyl alcohol	$C_6H_{12}Cl_2O$	1.4, 12°	Destrem. Ann. (5), 27, 50.
Dichlormethyl oxide	$C_2H_4Cl_2O$	1.315, 20°	Regnault. Ann. (2), 71, 398.
Tetrachlormethyl oxide	$C_2H_2Cl_4O$	1.606, 20°	Regnault. Ann. (2), 71, 401.
Tetrachlormethylethyl oxide.	$C_3H_4Cl_4O$	1.84, 0°	Magnanini. G. C. I. 16, 330.
Chlorethyl oxide	C_4H_9ClO	1.0572, 0°	Henry. C. R. 100, 1007.
Dichlorethyl oxide	$C_4H_8Cl_2O$	1.174, 23°	Lieben. J. 12, 446.
Tetrachlorethyl oxide	$C_4H_6Cl_4O$	1.5008	Malaguti. Ann. (2), 70, 341.
" "	"	1.4379, 0°	Paterno and Pisati. Ber. 5, 1054.
" "	"	1.4182, 15°.2	Paterno and Pisati. Ber. 5, 1054.
" "	"	1.3055, 99°.9	Paterno and Pisati. Ber. 5, 1054.
" "	"	1.4211, 15°	Roscoe and Schorlemmer's Treatise.
Pentachlorethyl oxide	$C_4H_5Cl_5O$	1.645	Jacobsen. Z. C. 14, 444.
" "	"	1.577, 8°	Henry. Ber. 7, 763.
Chloracetic acid	$C_2H_3ClO_2$	1.366, 73°	R. Hofmann. J. 10, 348.
Dichloracetic acid	$C_2H_2Cl_2O_2$	1.5216, 15°	Maumené. J. 17, 315.
Trichloracetic acid	$C_2HCl_3O_2$	1.617, 46°	Dumas. A. C. P. 32, 109.
Chlorpropionic acid	$C_3H_5ClO_2$	1.28, 0°	Clermont. Z. C. 14, 349.
Chlorbutyric acid	$C_4H_7ClO_2$	1.072, 0°	Balbiano. Ber. 10, 1749.
" " γ	"	1.2498, 10°	Henry. C. R. 101, 1158.
" " ?	"	1.065, 15°	Haubst. J. C. S. (2), 1, 693.
Chlorisobutyric acid	"	1.062, 0°	Balbiano. Ber. 11, 1693.
Methyl chlorocarbonate	$C_2H_3ClO_2$	1.236, 15°	Röse. Ber. 13, 2417.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl chlorocarbonate	$C_3 H_5 Cl O_2$	1.133, 15°	Dumas. Ann. (2), 54, 230.
Propyl chlorocarbonate	$C_4 H_7 Cl O_2$	1.094, 15°	Röse. Ber. 13, 2417.
Isopropyl chlorocarbonate	"	1.144, 4°	Spica. J. C. S. 52, 1028.
Isobutyl chlorocarbonate	$C_5 H_9 Cl O_2$	1.053, 15°	Röse. Ber. 13, 2417.
Isoamyl chlorocarbonate	$C_6 H_{11} Cl O_2$	1.082, 15°	" "
Dichlorethyl formate	$C_3 H_4 Cl_2 O_2$	1.261, 16°	Malaguti. Ann. (2), 70, 370.
Pentachloramyl formate	$C_6 H_7 Cl_5 O_2$	1.52	Springer. A. C. J. 3, 293.
Methyl monochloracetate	$C_3 H_5 Cl O_2$	1.22, 15°	Henry. B. S. C. 20, 448.
" "	"	1.2352, 19°.2	Henry. C. R. 101, 250.
Methyl dichloracetate	$C_3 H_4 Cl_2 O_2$	1.3808, 19°.2	" "
Dichlormethyl acetate	"	1.25	Malaguti. Ann. (2), 70, 381.
Methyl trichloracetate	$C_3 H_3 Cl_3 O_2$	1.4969, 14°	Bauer. A. C. P. 229, 163.
" "	"	1.4902, 20°.2	
" "	"	1.4892, 19°.2	Henry. C. R. 101, 250.
Ethyl monochloracetate	$C_4 H_7 Cl O_2$	1.1585, 20°	Brühl. A. C. P. 203, 1.
" "	"	.9925, 144°.5	Schiff. G. C. I. 13, 177.
" "	"	1.1722, 8°	Henry. C. R. 104, 1280.
Ethyl dichloracetate	$C_4 H_6 Cl_2 O_2$	1.801, 12°	Malaguti. Ann. (2), 70, 368.
" "	"	1.29	Forscher and Geuther. J. 17, 316.
" "	"	1.2821, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.0913, 157°.7	Schiff. G. C. I. 13, 177.
" "	"	1.0915, 157°.7	
Dichlorethyl acetate	"	1.3217, 10°.6	Henry. C. R. 97, 1308.
" "	"	1.104, 15°	Delacre. Bull. Acad. Belg. (3), 13, 255.
Ethyl trichloracetate	$C_4 H_5 Cl_3 O_2$	1.3826, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.1650, 167°.1	Schiff. G. C. I. 13, 177.
" "	"	1.1651, 167°.1	
Monochlorethyl dichloracetate.	"	1.200, 15°	Delacre. Ber. 21, ref. 183.
Dichlorethyl monochloracetate.	"	1.216, 15°	" "
Trichlorethyl acetate	"	1.367	Léblanc. Ann. (3), 10, 207.
" "	"	1.35, 20°	Malaguti. Ann. (3), 16, 62.
" "	"	1.3907, 23°.3	Garzarolli-Thurnlackh. Ber. 14, 2826.
" "	"	1.187, 15°	Delacre. Ber. 21, ref. 183.

Name.	Formula.	Sp. Gravity.	Authority.
Tetrachlorethyl acetate	$C_4 H_4 Cl_4 O_2$	1.485, 25°	Léblanc. Ann. (3), 10, 212.
Monochlorethyl trichloracetate.	"	1.251, 15°	Delacre. Ber. 21, ref. 183.
Dichlorethyl dichloracetate.	"	1.25, 15°	" "
Trichlorethyl monochloracetate.	"	1.25	" "
Trichlorethyl dichloracetate.	$C_4 H_3 Cl_5 O_2$	1.267	" "
Hexchlorethyl acetate	$C_4 H_2 Cl_6 O_2$	1.698, 23°.5	Léblanc. Ann. (3), 10, 215.
Heptachlorethyl acetate	$C_4 H Cl_7 O_2$	1.692, 24°.5	Léblanc. Ann. (3), 10, 208.
Propyl monochloracetate	$C_5 H_9 Cl O_2$	1.1096, 8°	Henry. C. R. 100, 114.
Butyl monochloracetate	$C_6 H_{11} Cl O_2$	1.013, 0°	Gehring. C. R. 102, 1400.
" "	"	1.081, 15°	
Trichlorbutyl acetate	$C_6 H_9 Cl_3 O_2$	1.3440, 8°.5	Garzarolli-Thurnlackh. Ber. 15, 2619.
Amyl monochloracetate	$C_7 H_{13} Cl O_2$	1.063, 0°	Hougounenq. B. S. C. 45, 328.
Methyl α chlorpropionate	$C_4 H_7 Cl O_2$	1.075, 4°	Kahlbaum. Ber. 12, 344.
Ethyl α chloropropionate	$C_5 H_9 Cl O_2$	1.0869, 20°	Brühl. A. C. P. 203, 1.
Ethyl β chloropropionate	"	1.1160, 8°	Henry. C. R. 100, 114.
Ethyl dichlorpropionate	$C_5 H_8 Cl_2 O_2$	1.2461, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.2493, 0°	Klimenko. Z. C. 18, 654.
Dichlorethyl propionate	"	1.282, 8°	Henry. C. R. 100, 114.
Methyl chlorbutyrate	$C_5 H_9 Cl O_2$	1.1894, 10°	Henry. C. R. 101, 1158.
Methyl α β dichlorbutyrate.	$C_5 H_8 Cl_2 O_2$	1.2809, 0°	Zeisel. Ber. 19, ref. 749.
" "	"	1.2614, 18°.8	
" "	"	1.2355, 41°.1	
Ethyl chlorbutyrate	$C_6 H_{11} Cl O_2$	1.0517, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.1221, 10°	Henry. C. R. 101, 1158.
" "	"	1.063, 17°.5	Markownikoff. A. C. P. 153, 243.
Methyl trichlorpropylcarbylacetate.	$C_7 H_{11} Cl_3 O_2$	1.3048, 11°.5	Garzarolli-Thurnlackh. A. C. P. 223, 149.
Chloroenanthic ether	$C_9 H_{17} Cl O_2$. ?	1.2912, 16°.5	Malaguti. Ann. (2), 70, 363.
Derivative of chlorinated methyl formate.	$C_4 H_5 Cl_3 O_4$	1.4786, 14°	Guthzeit. Quoted by Hentschel.
" "	"	1.4741, 27°	Hentschel. J. P. C. (2), 36, 99.
" "	$C_8 H_9 Cl_7 O_8$	1.5191	" "
Derivative of chlorinated ether.	$C_5 H_{11} Cl O$	.9482, 0°	Lieben and Bauer. J. 15, 494.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Derivative of chlorinated ether.	$C_6 H_{13} Cl O$	.9735, 0°	Lieben and Bauer. J. 15, 398.
Chloracetic anhydride	$C_4 H_5 Cl O_3$	1.201, 21°	Anthoine. J. Ph. Ch. (5), 8, 417.
Trichloracetic anhydride	$C_4 H_3 Cl_3 O_3$	1.530, 20°	" "
Tetrachloracetic anhydride.	$C_4 H_2 Cl_4 O_3$	1.574, 24°	" "
Acetyl chloride	$C_2 H_3 O. Cl$	1.125, 11°	Gerhardt. J. 5, 444.
" "	"	1.1305, 0°	Kopp. A. C. P. 95, 307.
" "	"	1.1072, 16°	
" "	"	1.13773, 0°	Thorpe. J. C. S. 37, 371.
" "	"	1.05698, 50°.73	
" "	"	1.1051, 20°	Brühl. A. C. P. 203, 1.
Chloracetyl chloride	$C_2 H_2 Cl O. Cl$	1.495, 0°	Wurtz. J. 10, 346.
Propionyl chloride	$C_3 H_5 O. Cl$	1.0646, 20°	Brühl. A. C. P. 203, 1.
α Chloropropionyl chloride	$C_3 H_4 Cl O. Cl$	1.2394, 7°.5	Henry. C. R. 100, 114.
β Chloropropionyl chloride	"	1.3307, 13°	" "
Butyryl chloride	$C_4 H_7 O. Cl$	1.0277, 20°	Brühl. A. C. P. 203, 1.
Isobutyryl chloride	"	1.0174, 20°	" "
Chlorobutyryl chloride	$C_4 H_6 Cl O. Cl$	1.257, 17°	Markownikoff. A. C. P. 153, 241.
" "	"	1.2679, 10°	Henry. C. R. 101, 1158.
Valeryl chloride	$C_5 H_9 O. Cl$	1.005, 6°	Béchamp. J. 9, 429.
" "	"	.9887, 20°	Brühl. A. C. P. 203, 1.
Chloracetone	$C_3 H_5 Cl O$	1.19	Linnemann.
"	"	1.14, 14°	Riche. J. 12, 339.
"	"	1.162, 16°	Linnemann. J. 18, 312.
"	"	1.18, 16°	Linnemann. J. 19, 308.
"	"	1.17	Henry. B. S. C. 19, 219.
"	"	1.158, 13°	Cloëz. Ann. (6), 9, 145.
Dichloracetone	$C_3 H_4 Cl_2 O$	1.331	Kane.
"	"	1.236, 21°	Fittig. J. 12, 345.
"	"	1.326, 0°	Theegarten. C. C. 4, 580.
"	"	1.234, 15°	Cloëz. Ann. (6), 9, 145.
Tetrachloracetone	$C_3 H_2 Cl_4 O$	1.482, 17°	" "
Pentachloracetone	$C_3 H Cl_5 O$	1.6	Städeler. J. 6, 398.
"	"	1.7	
"	"	1.617, 8°	Two isomers. Cloëz. B. S. C. 39, 638 and 640.
"	"	1.576, 14°	
Chloraldehyde	$C_2 H_3 Cl O$	1.28	Riche. J. 12, 485.
Paradichloraldehyde	$(C_2 H_2 Cl_2 O)_n$	1.69, s.	Jacobsen. Ber. 8, 88.
Chloral	$C_2 H Cl_3 O$	1.502, 18°	Liebig. A. C. P. 1, 195.
"	"	1.5183, 0°	Kopp. A. C. P. 95, 307.
"	"	1.4903, 22°.2	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Chloral	C_2HCl_3O	1.5448, 0°	Thorpe. J. C. S. 37, 371.
"	"	1.3821, 97°.2	
"	"	1.5121, 20°	Brühl. A. C. P. 203, 1.
"	"	1.54179, 4°	Passavant. C. N. 42, 288.
"	"	1.54170, 4°	
"	"	1.3692, 97°.73	
"	"	1.5292, 9°	Perkin. J. C. S. 51, 808.
"	"	1.5197, 15°	
"	"	1.5060, 25°	
Parachloralide	$(C_2HCl_3O)_n$	1.5765, 14°	Clöez. J. 12, 434.
Chloral hydrate	$C_2H_3Cl_3O_2$	1.901	Rüdorff. Ber. 12, 252.
" "	"	1.818, 4°, pulv.	Schröder. Ber. 12, 561.
" "	"	1.848, 4°, cryst.	
" "	"	1.6415, 49°.9	Perkin. J. C. S. 51, 808.
" "	"	1.6274, 58°.4	
" "	"	1.6136, 66°.9	
" "	"	1.5704, 66°, l.	Jungfleisch, Lebaigne, and Roucher. J. Ph. C. (4), 11, 208.
" "	"	1.5719, 66°, l.	
" "	"	1.5771, 66°, l.	
Chloral ethylate	$C_4H_7Cl_3O_2$	1.143, 40°, l.	Martins and Mendelssohn-Bartholdy. Z. C. 13, 650.
" "	"	1.3286, 66°, l.	Jungfleisch, Lebaigne, and Roucher. J. Ph. C. (4), 11, 208.
" "	"	1.3439, 66°, l.	
Chloral amylate	$C_7H_{11}Cl_3O_2$	1.234, 25°	Martins and Mendelssohn-Bartholdy. Z. C. 13, 650.
Chloracetyl chloral	$C_4H_4Cl_4O_2$	1.4761, 17°	Meyer and Dulk. A. C. P. 171, 65.
Diacetylchloral hydrate	$C_6H_7Cl_3O_4$	1.422, 11°	" "
Acetylchloral ethylate	$C_6H_9Cl_3O_3$	1.327, 11°	" "
Derivative of chloral	$C_6H_6Cl_8O_2$	1.73, 17°	Henry. Ber. 7, 764.
" " "	$C_7H_{10}Cl_4O_3$	1.42, 11°	" "
Butyl chloral	$C_4H_5Cl_3O$	1.3956, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.4111, 7°	Gladstone. Bei. 9, 249.
Butyl chloral hydrate	$C_4H_7Cl_3O_2$	1.693, 4°	Schröder. Ber. 12, 561.
" " "	"	1.695, 4°	
Derivative of chloralide	$C_5HCl_7O_3$	1.7426, 20°	Anschutz and Haslam. A. C. P. 239, 300.
Chlorovaleral	C_5H_9ClO	1.108, 14°	A. Schröder. Z. C. 14, 510.
Derivative of valeral	$C_{10}H_{10}Cl_4O$	1.272, 14°	" "
" "	$C_{10}H_{12}Cl_6O$	1.397, 14°	" "
Dichlorvinyl methyl oxide	$C_3H_4Cl_2O$	1.2934, 0°	Denaro. G. C. I. 14, 117.
" " "	"	1.1574, 100°	
Monochlorvinyl ethyl oxide	C_4H_7ClO	1.0361, 19°	Godefroy. C. R. 102, 869.
Trichlorvinyl ethyl oxide	$C_4H_5Cl_3O$	1.3725, 0°	Paterno and Pisati. J. C. S. (2), 11, 158.
" " "	"	1.2354, 99°.9	

Name.	Formula.	Sp. Gravity.	Authority.
Trichlorvinyl ethyl oxide	$C_4H_5Cl_3O$	1.3322, 19°	Godefroy. C. R. 102, 869.
Methylene aceto-chloride	$C_3H_5ClO_2$	1.1953, 14°.2	Henry. B. S. C. 20, 448.
Ethylene aceto-chloride	$C_4H_7ClO_2$	1.1783, 0°	Simpson. J. 12, 487.
" "	"	1.114, 15°	Franchimont. J. C. S. 44, 452.
Ethylene butyro-chloride	$C_6H_{11}ClO_2$	1.0854, 0°	Simpson. J. 12, 489.
Ethylidene oxychloride	$C_4H_8Cl_2O$	1.1376, 12°	Lieben. J. 11, 291.
" "	"	1.136, 14°.5	Laatsch. A. C. P. 218, 13.
Ethylidene aceto-chloride	$C_4H_7ClO_2$	1.114, 15°	Rübencamp. A. C. P. 225, 267.
Ethylidene propio-chloride.	$C_5H_9ClO_2$	1.071, 15°	" "
Ethylidene butyro-chloride.	$C_6H_{11}ClO_2$	1.038, 15°	" "
Ethylidene valero-chloride	$C_7H_{13}ClO_2$	.997, 15°	" "
Aldehydemethyl chloride	C_3H_7ClO	.996, 17°	" "
Trichlordimethyl acetal	$C_4H_7Cl_3O_2$	1.28	Magnanini. G. C. I. 16, 330.
Trichlormethylethyl acetal.	$C_5H_9Cl_3O_2$	1.32	" "
Chloracetal	$C_6H_{13}ClO_2$	1.0195	Lieben. J. 10, 437.
"	"	1.0418, 0°	Paterno and Mazzara. J. C. S. (2), 11, 1217.
"	"	1.0416, 26°.3	
"	"	.9315, 99°.9	
"	"	1.026, 15°	Klien. J. C. S. 31, 291.
Dichloracetal	$C_6H_{12}Cl_2O_2$	1.1383, 14°	Lieben. J. 10, 436.
Trichloracetal	$C_6H_{11}Cl_3O_2$	1.2813, 0°	Paterno and Pisati. J. C. S. (2), 11, 258.
"	"	1.2655, 22°.2	
"	"	1.1617, 99°.96	
"	"	1.288	Byasson. C. N. 38, 46.
Trimethylene chlorhydrin	C_3H_7ClO	1.132, 17°	Reboul. C. R. 79, 169.
Propylene chlorhydrin	"	1.1302, 0°	Oeser. J. 18, 448.
" "	"	1.247	Oppenheim. J. 21, 340.
Chlorbutylenechlorhydrin	$C_4H_8Cl_2O$	1.0335, 0°	Oeconomides. Ber. 14, 1568.
Hexylene chlorhydrin	$C_6H_{13}ClO$	1.0143 } 11°	Henry. C. R. 97, 260.
" "	"	1.018 } 11°	
Hexylene aceto-chloride	$C_8H_{15}ClO_2$	1.04, 6°	" "
Heptylene chlorhydrin	$C_7H_{15}ClO$	1.014, 0°	Clermont. Z. C. 13, 411.
" "	"	1.001, 14°	
Octylene chlorhydrin	$C_8H_{17}ClO$	1.003, 0°	" "
" "	"	.987, 31°	
Octylene aceto-chloride	$C_{10}H_{19}ClO_2$	1.026, 0°	" "
" "	"	1.011, 18°	
Dichlorethoxyethylene	$C_4H_6Cl_2O$	1.08, 10°	Geuther and Brockhoff. J. P. C. (2), 7, 114.
Pentachlorpropylene oxide.	C_3HCl_5O	a1.5	Cloëz. Ann. (6), 9, 145.
Ethyl-glycollic chloride	$C_4H_7ClO_2$	1.145, 1°	Henry. J. 22, 531.
Chlorolactic ether	$C_5H_9ClO_3$	1.097, 0°	Wurtz. J. 11, 254.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Ethyl chloromalonate	$C_7 H_{11} Cl O_4$	1.185, 20°	Conrad and Bischoff. A. C. P. 209, 221.
Ethyl ethylchloromalonate.	$C_9 H_{15} Cl O_4$	1.110, 17°	Guthzeit. A. C. P. 209, 233.
Ethyl chlorisobutylmalonate.	$C_{11} H_{19} Cl O_4$	1.094, 15°	Conrad and Bischoff. Ber 13, 600.
" "	"	1.091, 15°	Guthzeit. A. C. P. 209, 237.
Succinyl chloride	$C_4 H_4 Cl_2 O_2$	1.39	Gerhardt and Chiozza. C. R. 36, 1052.
Chloromaleic ether	$C_8 H_{11} Cl O_4$	1.15, 11°	Henry. A. C. P. 156, 179.
" "	"	1.178, 20°	Frank. Ber. 10, 928.
Ethyl chloracetacetate	$C_6 H_9 Cl O_3$	1.19, 14°	Allihn. Ber. 11, 569.
Ethyl dichloracetacetate	$C_6 H_8 Cl_2 O_3$	1.293, 16°	Conrad. A. C. P. 186, 234.
Ethyl chloracetopropionate.	$C_7 H_{11} Cl O_3$	1.196, 21°	Conrad and Guthzeit. Ber. 17, 2287.
Ethyl monochlormethylacetacetate.	$C_7 H_{11} Cl O_3$	1.093, 15°	Isbert. A. C. P. 234, 160.
Ethyl dichlormethylacetacetate.	$C_7 H_{10} Cl_2 O_3$	1.2250, 17°	Isbert. Jena Inaug. Diss. 1866.
Ethyl monochlorethylacetacetate.	$C_8 H_{13} Cl O_3$	1.0523, 15°	Isbert. A. C. P. 234, 160.
Ethyl dichlorethylacetacetate.	$C_8 H_{12} Cl_2 O_3$	1.183, 15°	" "
Ethyldiethylchloracetacetate.	$C_{10} H_{17} Cl O_3$	1.063, 15°	James. J. C. S. 49, 50.
Ethyl diethyldichloracetacetate.	$C_{10} H_{16} Cl_2 O_3$	1.155, 15°	" "
Acetotrichlorethylidene acetic ether.	$C_8 H_9 Cl_3 O_3$	1.342, 15°	Matthews. J. C. S. 43, 203.
Monochlorhydrin	$C_3 H_7 Cl O_2$	1.31	Berthelot. J. 6, 456.
"	"	1.4, 13°	Henry. J. C. S. (2), 13, 346.
" β	"	1.328, 0°	Hanriot. Ber. 10, 727.
Dichlorhydrin	$C_3 H_6 Cl_2 O$	1.37	Berthelot. J. 7, 449.
"	"	1.3699, 9°	Henry. A. C. P. 155, 324.
"	"	1.355, 17°.5	Gegerfeldt. Z. C. 13, 672.
"	"	1.383, 0°	Markownikoff. J. C. S. (2), 12, 241.
"	"	1.367, 19°	
"	"	1.3799, 0°	Tollens. A. C. P. 156, 164.
"	"	1.3681, 11°.5	
Epichlorhydrin	$C_3 H_5 Cl O$	1.204, 0°	Darmstaedter. J. 21, 454.
"	"	1.194, 11°	Reboul. J. 13, 456.
"	"	1.20313, 0°	Thorpe. J. C. S. 37, 371.
"	"	1.05667, 116°.55	
"	"	1.0588 } 115°.8	Schiff. Ber. 14, 2768.
"	"	1.0598 } 115°.8	
"	"	1.194, 11°	Clöez. Ann. (6), 9, 145.
Ethyl monochlorhydrin	$C_5 H_{11} Cl O_2$	1.117, 11°	Henry. J. C. S. (2), 13, 346.

Name.	Formula.	Sp. Gravity.	Authority.
Diethyl monochlorhydrin	$C_7 H_{15} Cl O_2$	1.03, 10°.5	Alsberg. J. 17, 496.
" "	"	1.005, 17°	Reboul and Lourenço. J. 14, 674.
Amyl monochlorhydrin	$C_8 H_{17} Cl O_2$	1.00, 20°	Reboul. J. 13, 464.
Aceto-chlorhydrin	$C_5 H_9 Cl O_3$	1.27, 9°	Henry. J. C. S. (2), 13, 346.
Aceto-dichlorhydrin	$C_5 H_8 Cl_2 O_2$	1.283, 11°	Truchot. J. 18, 503.
" "	"	1.274, 8°	Henry. Ber. 4, 701.
Diaceto-chlorhydrin	$C_7 H_{11} Cl O_4$	1.243, 4°	Truchot. J. 18, 503.
Butyro-dichlorhydrin	$C_7 H_{12} Cl_2 O_2$	1.194, 11°	" "
Valero-dichlorhydrin	$C_8 H_{14} Cl_2 O_2$	1.149, 11°	" "
Butenyl monochlorhydrin	$C_4 H_9 Cl O_2$	1.2324, 17°	Zikes. Ber. 18, ref. 433.
Butenyl dichlorhydrin	$C_4 H_8 Cl_2 O$	1.274, 16°	" "
Butenyl epichlorhydrin	$C_4 H_7 Cl O$	1.098, 15°	" "
Diallyl dichlorhydrin	$C_6 H_{12} Cl_2 O_2$	1.4, 7°	Henry. Ber. 7, 416.
a Chlorallyl alcohol	$C_3 H_5 Cl O$	1.164, 19°	Henry. Ber. 15, 3085.
β Chlorallyl alcohol	"	1.162, 15°	Romburgh. Ber. 15, 245.
Methylchlorallylcarbinol	$C_5 H_9 Cl O$	1.08821, 14°.1	Garzarolli-Thurnlackh. A.C.P. 223, 149.
Chlorcrotyl alcohol	$C_4 H_7 Cl O$	1.1312, 15°	Garzarolli-Thurnlackh. Ber. 15, 2619.
Methyl chlorcrotonate	$C_5 H_7 Cl O_2$	1.143, 15°	Fröhlich. J. 22, 547.
" "	"	1.0933, 4°	Kahlbaum. Ber. 12, 344.
Ethyl chlorcrotonate	$C_6 H_9 Cl O_2$	1.113, 15°	Fröhlich. J. 22, 547.
" "	"	1.129, 15°	Claus. A. C. P. 191, 64.
Chlorethylacetylene tetracarbonic ether.	$C_{16} H_{25} Cl O_8$	1.076, 20°	Bischoff and Rach. Ber. 17, 2786.
Citraconyl chloride	$C_5 H_4 Cl_2 O_2$	1.40, 15°	Gerhardt and Chiozza. J. 6, 394.
" "	"	1.408, 16°.4	O. Strecker. Ber. 15, 1640.
Propylphycite trichlorhydrin.	$C_3 H_5 Cl_3 O$	1.4324, 14°	Wolff. Z. C. 12, 465.
Dichloroleic acid	$C_{18} H_{32} Cl_2 O_2$	1.082, 7°.9	Lefort. J. 6, 451.
Derivative of isobutyl alcohol.	$C_{24} H_{25} Cl O_4$	.967, 15°	Boquillon. J. C. S. 48.
Derivative of isohexic acid	$C_4 H_4 Cl_2 O$	1.471, 10°	Demarçay. Ber. 12, 380.
Chlorphenol	$C_6 H_5 Cl O$	1.306, 20°.5	Petersen and Baehr-Predari. A. C. P. 157, 125.
Chlormethylphenol	$C_7 H_7 Cl O$	1.182, 9°	Henry. Z. C. 13, 247.
Chlorparakresol	"	1.2106, 25°	Schall and Dralle. Ber. 17, 2529.
Chlormethylparakresol	$C_8 H_9 Cl O$	1.1493, 25°	" "
Chlorethylphenol	"	1.106, 9°	Henry. Z. C. 13, 247.
Methylchlorphenetol. *a*	$C_9 H_{11} Cl O$	1.127, 19°.5	Wroblevsky. Z. C. 13, 164.
" *β*	"	1.131, 18°	

Name.	Formula.	Sp. Gravity.	Authority.
Chloranethol	$C_{10} H_{11} Cl O$	1.1154, 0°	Ladenburg. Z. C. 12, 575.
"	"	1.191, 20°	Landolph. C. R. 82, 227.
Metachlorsalicylol	$C_7 H_5 Cl O_2$	1.29, 8°	Henry. J. 22, 509.
Metachlorbenzoic acid	"	1.29	St. Evre. J. 1, 529.
Ethyl metachlorbenzoate	$C_9 H_{10} Cl O_2$	.981, 10°	" "
Ethyl orthodichlorbenzoate.	$C_9 H_8 Cl_2 O_2$	1.3278, 0°	Beilstein. Ber. 8, 435.
Chlorisopropyl benzoate	$C_{10} H_{11} Cl O_2$	1.172, 19°	Morley and Green. J. C. S. 47, 135.
" "	"	1.149, 45°	
Derivative of benzoic ether	$C_{18} H_{16} Cl_6 O_3$	1.346, 10°.8	Malaguti. Ann. (2), 70, 375.
Benzyl monochloracetate	$C_9 H_9 Cl O_2$	1.2223, 4°	Seubert. Ber. 21, 281.
Benzyl dichloracetate	$C_9 H_8 Cl_2 O_2$	1.3130, 4°	" "
Benzyl trichloracetate	$C_9 H_7 Cl_3 O_2$	1.3887, 4°	" "
Benzoyl chloride	$C_7 H_5 Cl O$	1.196	Wöhler and Liebig. A. C. P. 3, 262.
" "	"	1.250, 15°	Cahours. J. 1, 532.
" "	"	1.2324, 0°	Kopp. A. C. P. 95, 307.
" "	"	1.2142, 19°	
" "	"	.9857, 198°	Ramsay. J. C. S. 35, 463.
" "	"	1.2122, 20°	Brühl. A. C. P. 235, 1.
Chlorodracylic chloride	$C_7 H_4 Cl_2 O$	1.377	Emmerling. Ber. 8, 881.
Toluyl chloride	$C_8 H_7 Cl O$	1.175	Cahours. J. 11, 265.
Phenylacetic chloride	"	1.16817, 20°	Anschütz and Berns. Ber. 20, 1390.
Cumyl chloride	$C_{10} H_{11} Cl O$	1.07, 15°	Cahours. J. 1, 534.
Anisyl chloride	$C_8 H_7 Cl O_2$	1.261, 15°	Cahours. J. 1, 538.
Cinnamyl chloride	$C_9 H_7 Cl O$	1.207, 16°	Cahours. J. 1, 535.
Phthalyl chloride	$C_8 H_4 Cl_2 O_2$	1.0489, 20°	Brühl. A. C. P. 235, 1.
Dichloracetophenone	$C_8 H_6 Cl_2 O$	1.338, 15°	Gautier. Ber. 20, ref. 12.
Trichloracetophenone	$C_8 H_5 Cl_3 O$	1.427, 15°	" "
Chlorobenzyl ethylate	$C_9 H_{11} Cl O$	1.121, 14°	Naquet. J. 15, 420.
Ethyl benzylchlormalonate.	$C_{14} H_{17} Cl O_4$	1.150, 19°	Conrad. Ber. 13, 2159.
Benzodichlorhydrin	$C_{10} H_{10} Cl_2 O_2$	1.441, 8°	Truchot. J. 18, 503.
Trichlorphenomalic acid	$C_7 H_7 Cl_3 O_5$	1.5	Carius. J. 1866, 561.
Tetrachlorethyl camphorate.	$C_{14} H_{20} Cl_4 O_4$	1.386, 14°	Malaguti. Ann. (2), 70, 360.
Santonyl chloride		1.1644	Carnelutti and Nasini Ber. 18, 2210.
Derivative of bergamot oil	$6 (C_{10} H_{16}) . 2 H Cl . H_2 O$	.896	Ohme. A. C. P 31, 318.

LIII. COMPOUNDS CONTAINING C, CL, N, OR C, H, CL, N.

Name.	Formula.	Sp. Gravity.	Authority.
Chloracetonitrile	$C_2 H_2 Cl N$	1.204, 11°.2	Bisschopinck. B. S. C. 20, 450.
"	"	1.198, 20°	Engler. Ber. 6, 1008.
Dichloracetonitrile	$C_2 H Cl_2 N$	1.374, 11°.4	Bisschopinck. B. S. C. 20, 450.
Trichloracetonitrile	$C_2 Cl_3 N$	1.444	Dumas. J. 1, 593.
"	"	1.439, 12°.2	Bisschopinck. B. S. C. 20, 450.
Dichlorpropionitrile	$C_3 H_3 Cl_2 N$	1.481, 15°	Otto. J. 18, 400.
γ Chlorobutyronitrile	$C_4 H_6 Cl N$	1.1620, 10°	Henry. C. R. 101, 1158.
Dichlorethylamine	$C_2 H_5 Cl_2 N$	1.2397, 5°	Tscherniak. Ber. 9, 147.
"	"	1.2300, 15°	
Chloroxalmethylin	$C_4 H_5 Cl N_2$	1.2478, 16°	Wallach and Schulze. Ber. 14, 424.
Chloroxalethylin	$C_6 H_9 Cl N_2$	1.1420, 15°	Wallach. Ber. 7, 328.
"	"	1.142	Wallach and Stricker. Ber. 13, 512.
Chloroxalpropylin	$C_8 H_{13} Cl N_2$	1.0900	Wallach and Schulze. Ber. 14, 424.
Orthochloraniline	$C_6 H_6 Cl N$	1.2338, 0°	Beilstein and Kurbatow. Ber. 7, 487.
Metachloraniline	"	1.2432, 0°	Beilstein and Kurbatow. A. C. P. 176, 45.
Chlorotoluidine. B. 222°	$C_7 H_8 Cl N$	1.151, 20°	Wroblevsky. Z. C. 12, 322–544.
" B. 238°	"	1.1855, 20°	Wroblevsky. Z. C. 12, 684.
" B. 237°—242°	"	1.208, 19°	" "
" B. 236°	"	1.175, 18°	Henry and Radziszewski. Z. C. 12, 542.
Chlorpicoline	$C_6 H_6 Cl N$	1.146, 20°	Ost. J. P. C. (2), 27, 278.
Orthochlorchinoline	$C_9 H_6 Cl N$	1.2752, 16°.2	Bodewig. Tübingen In. Diss. 1885.
"	"	1.2754, 16°.6	
Parachlorchinoline	"	1.3768, 14°.6	" "
"	"	1.3766, 15°	
Chloride from methyluracil.	$C_5 H_3 N_2 Cl_3$	1.6273, 21°.8	Behrend. A. C. P. 229, 26.

LIV. COMPOUNDS CONTAINING C, CL, N, O, OR C, H, CL, N, O.

Name.	Formula.	Sp. Gravity.	Authority.
Chloronitromethane	$C H_2 Cl N O_2$	1.466, 15°	Tscherniak. Ber. 8, 609.
Dichlordinitromethane	$C Cl_2 N_2 O_4$	1.685, 15°	Marignac. Watts' Dict.
Chlorpicrin	$C Cl_3 N O_2$	1.6657	Stenhouse. J. 1, 540.
"	"	1.69225, 0°	Thorpe. J. C. S. 37, 371.
"	"	1.48444, 111°.9	Thorpe. J. C. S. 37, 371.
Dichloramyl nitrite	$C_5 H_9 Cl_2 N O_2$	1.233, 12°	Guthrie. J. 11, 404.
Trichloracetyl cyanide	$C_3 Cl_3 N O$	1.559, 15°	Hofferichter. J. P. C. (2), 20, 195.
Trichloracetic dimethylamide.	$C_4 H_6 Cl_3 N O$	1.441, 15°	Franchimont and Klobbie. Ber. 20, ref. 690.
Ethylene chloronitrin	$C_2 H_4 Cl N O_3$	1.378, 21°	Henry. Ann. (4), 27, 243.
Propylene chloronitrin	$C_3 H_6 Cl N O_3$	1.28, 12°	" "
Dichlormethoxylacetonitril.	$C_3 H_3 Cl_2 N O$	1.3885	Bauer. A. C. P. 229, 163.
Dichlorethoxylacetonitril	$C_4 H_5 Cl_2 N O$	1.3394, 15°.5	" "
Dichlorpropoxylacetonitril.	$C_5 H_7 Cl_2 N O$	1.2382, 15°.5	" "
Dichlorisobutoxylacetonitril.	$C_6 H_9 Cl_2 N O$	1.1226, 15°.5	" "
Monochlordinitrin	$C_3 H_5 Cl N_2 O_6$	1.5112, 9°	Henry. A. C. P. 155, 168.
Dichlormononitrin	$C_3 H_5 Cl_2 N O_3$	1.465, 10°	" "
Chlorazol	$C_4 H_3 Cl_3 N_2 O_4$	1.555	Mühlhaüser. J. 7, 671.
Dichlornitrophenol	$C_6 H_3 Cl_2 N O_3$	1.59	Fischer. A. C. P., 7th Supp., 185.
Chlornitrobenzene	$C_6 H_4 Cl N O_2$	1.377, 0°	Sokoloff. J. 19, 552.
"	"	1.358, 0°	" "
"	"	1.368, 22°	Jungfleisch. J. 21, 345.
" Meta	"	1.534	Schröder. Ber. 13, 1070.
" Para	"	1.380, 22°	Jungfleisch. J. 21, 343.
Chlordinitrobenzene	$C_6 H_3 Cl N_2 O_4$	1.697, 22°	Jungfleisch. J. 21, 345.
"	"	1.6867, 16°.5	Jungfleisch. J. 21, 346.
"	"	1.72, 18°	Engelhardt and Latschinoff. Z. C. 13, 232.
Dichlornitrobenzene	$C_6 H_3 Cl_2 N O_2$	1.669, 22°	Jungfleisch. J. 21, 348.
Trichlornitrobenzene	$C_6 H_2 Cl_3 N O_2$	1.790, 22°	Jungfleisch. J. 21, 351.
Dichlordinitrobenzene	$C_6 H_2 Cl_2 N_2 O_4$	1.7103, 16°	Jungfleisch. J. 21, 348.
Trichlordinitrobenzene	$C_6 H Cl_3 N_2 O_4$	1.850, 25°	Jungfleisch. J. 21, 352.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrachlornitrobenzene	$C_6 H Cl_4 N O_2$	1.744, 25°	Jungfleisch. J. 21, 353.
Pentachlornitrobenzene	$C_6 Cl_5 N O_2$	1.718, 25°	Jungfleisch. J. 21, 354.
Chlornitrotoluene	$C_7 H_6 Cl N O_2$	1.307, 18°	Wroblevsky. Z. C. 12, 683.
"	"	1.3259, 18°	" "
"	"	1.300, 20°	Wroblevsky. Ber. 7, 1062.
Parachlormetanitrotoluene.	"	1.297, 22°	Gattermann and Kaiser. Ber. 18, 2600.
Dichlornitrotoluene	$C_7 H_5 Cl_2 N O_2$	1.455, 17°	Wroblevsky and Pirogoff. Ber 3, 203.
Derivative of acetanilide	$C_8 H_8 Cl_3 N O_2$	1.3893, 20°	Witt. Ber. 8, 1227.
Derivative of protein	$C_{12} H_{12} Cl_3 N O_2$	1.628	Mühlhäuser. J. 7, 671.
" " "	$C_{12} H_{12} Cl_3 N O_4$	1.360	" "

LV. COMPOUNDS CONTAINING C, H, AND BR.

1st. Bromides of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl bromide	$C H_3 Br$	1.66443, 0°	Pierre. C. R. 27, 213.
" "	"	1.732 } 0°	Twolots. Merrill. J. P. C. (2), 18, 293.
" "	"	1.7116 } 0°	
" "	"	1.73306, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.72345, 25°	
" "	"	1.46576, 15°	Weegmann. Z. P. C. 2, 218.
" "	"	1.45967, 18°	
" "	"	1.45554, 20°	
" "	"	1.45349, 21°	
" "	"	1.44733, 24°	
" "	"	1.44122, 27°	
Ethyl bromide	$C_2 H_5 Br$	1.40	Löwig. A. C. P. 3, 292.
" "	"	1.47329, 0°	Pierre. C. R. 27, 213.
" "	"	1.4600, 20°	Haagen. P. A. 131, 117.
" "	"	1.4621, 9°	Dehn. A. C. P., 4th Supp., 85.
" "	"	1.4685, 13°.5	Linnemann. A. C. P. 160, 195.
" "	"	1.4189, 15°	Mendelejeff. J. 13, 7.
" "	"	1.4775, 5°–10°	Regnault. P. A. 62, 50.
" "	"	1.4679, 10°–15°	
" "	"	1.4582, 15°–20°	
" "	"	1.47, 15°	Gladstone and Tribe. J. C. S. (2), 12, 410.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl bromide	C_2H_5Br	1.4069, 20°	Naumann. Ber. 10, 2016.
" "	"	1.4579, 14°	De Heen. Bei. 5, 105.
" "	"	1.4134, 38°.4	Schiff. Ber. 19, 560.
" "	"	1.44988, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.43250, 25°	
Propyl bromide	C_3H_7Br	1.353, 16°	Chapman and Smith. J. 22, 360.
" "	"	1.388, 0°	Rossi. A. C. P. 159, 79.
" "	"	1.3497, 0°	Pierre and Puchot. Ann. (4), 22, 284.
" "	"	1.301, 30°.15	
" "	"	1.2589, 54°.2	
" "	"	1.3577, 16°	Linnemann. A. C. P. 161, 40.
" "	"	1.3520, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.3529, 20°	
" "	"	1.3617, 14°	De Heen. Bei. 5, 115.
" "	"	1.3835, 0°	Zander. A. C. P. 214, 181.
" "	"	1.2639, 71°	
" "	"	1.36110, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.34739, 25°	
Isopropyl bromide	"	1.320, 13°	Linnemann. J. 18, 489.
" "	"	1.33, 21°	Linnemann.
" "	"	1.248, 20°	Linnemann. A. C. P. 161, 18.
" "	"	1.2997, 20°	Three lots. Brühl. A. C. P. 203, 1.
" "	"	1.3097, 20°	
" "	"	1.3117, 20°	
" "	"	1.3397, 0°	Zander. A. C. P. 214, 181.
" "	"	1.2368, 60°	
" "	"	1.31978, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.30522, 25°	
Butyl bromide	C_4H_9Br	1.305, 0°	Lieben and Rossi. A. C. P. 158, 137.
" "	"	1.2792, 20°	
" "	"	1.2571, 40°	
" "	"	1.2990, 20°	Linnemann. Ann. (4), 27, 268.
" "	"	1.2605, 14°	De Heen. Bei. 5, 105.
Isobutyl bromide	"	1.274, 16°	Wurtz. J. 7, 572.
" "	"	1.2702, 16°	Chapman and Smith. J. C. S. 22, 153.
" "	"	1.249, 0°	Pierre and Puchot. Ann. (4), 22, 314.
" "	"	1.191, 40°.2	
" "	"	1.1408, 73°.5	
" "	"	1.2038, 16°	Linnemann. A. C. P. 162, 1.
" "	"	1.1456, 90°.5	Schiff. Bei. 9, 559.
" "	"	1.27221, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.25984, 25°	
Trimethylcarbyl bromide	"	1.215, 20°	Roozeboom. Ber. 14, 2396.
" "	"	1.20200, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.18922, 25°	
Normal pentyl bromide	$C_5H_{11}Br$	1.246, 0°	Lieben and Rossi. A. C. P. 159, 70.
" " "	"	1.2234, 20°	
" " "	"	1.2044, 40°	

Name.	Formula.	Sp. Gravity.	Authority.
Amyl bromide	$C_5H_{11}Br$	1.16576, 0°	Pierre. C. R. 27, 213.
" "	"	1.217, 16°	Chapman and Smith. J. 22, 367.
" "	"	1.2045, 20°	Haagen. P. A. 131, 117.
" "	"	1.2059, 15°.7	Mendelejeff. J. 13, 7.
" "	"	1.0502, 120°	Ramsay. J. C. S. 35, 463.
" "	"	1.2002, 14°	De Heen. Bei. 5, 105.
" "	"	1.0126 } 117°.1	Schiff. Ber. 14, 2766.
" "	"	1.0127 } 117°.1	
" "	"	1.2058, 22°	Lachowicz. A. C. P. 220, 171.
" "	"	1.0881, 118°.5	Schiff. Ber. 19, 560.
" " Active	"	1.225, 15°	Le Bel. B. S. C. 25, 546.
" " Inactive	"	1.2358, 0°	Balbiano. Ber. 9, 1437.
" "	"	1.21927, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.20834, 25°	
Normal hexyl bromide	$C_6H_{13}Br$	1.1935, 0°	Lieben and Janecek. J. R. C. 5, 156.
" " "	"	1.1725, 20°	
" " "	"	1.1561, 40°	
Normal heptyl bromide	$C_7H_{15}Br$	1.133, 16°	Cross. J. C. S. 32, 123.
Secondary heptyl bromide	"	1.422, 17°.5	Venable. Ber. 13, 1650.
Normal octyl bromide	$C_8H_{17}Br$	1.116, 16°	Zincke. J. 22, 371.
" " "	"	1.11798, 15°	Perkin. J. P. C. (2), 31, 481.
" " "	"	1.10993, 25°	
Secondary octyl bromide	"	1.0989, 22°	Lachowicz. A. C. P. 220, 185.

2d. Bromides of the Series $C_nH_{2n}Br_2$.

Name.	Formula.	Sp. Gravity.	Authority.
Methylene bromide	CH_2Br_2	2.0844, 11°.5	Steiner. Ber. 7, 507.
" "	"	2.4930, 0°	Henry. Ann. (5), 30, 266.
" "	"	2.49850 } 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	2.499922 } 15°	
" "	"	2.47849 } 25°	
" "	"	2.47745 } 25°	
Ethylene bromide	$CH_2Br.CH_2Br$	2.164, 21°	Regnault. Ann. (2), 59, 358.
" "	"	2.128, 18°	D'Arcet. J. P. C. 5, 28.
" "	"	2.16292, 20°.1	Pierre. C. R. 27, 213.
" "	"	2.179	Butlerow. J. 14, 652.
" "	"	2.1827, 20°	Haagen. P. A. 131, 117.

Name.	Formula.	Sp. Gravity.	Authority.
Ethylene bromide	$CH_2Br.CH_2Br$	2.198, 10°	Reboul. Z. C. 13, 200.
" "	"	2.21324, 0°	Thorpe. J. C. S. 37, 371.
" "	"	1.93124, 131°.45	Thorpe. J. C. S. 37, 371.
" "	"	2.1785, 20°	Anschütz. A. C. P. 221, 133.
" "	"	2.1767, 21°.5	Anschütz. A. C. P. 221, 133.
" "	"	1.9246, 130°.3	Schiff. Ber. 19, 560.
" "	"	2.18895, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	2.17271, 25°	Perkin. J. P. C. (2), 32, 523.
" "	"	2.17197, 25°	Perkin. J. P. C. (2), 32, 523.
" "	"	2.17681, 20°	Weegmann. Z. P. C. 2, 218.
Ethylidene bromide	$CH_3.CHBr_2$	2.135, 0°	Caventou. J. 14, 608.
" "	"	2.129, 10°	Reboul. Z. C. 13, 200.
" "	"	2.132, 10°	Reboul. Z. C. 13, 200.
" "	"	2.0822, 21°.5	Anschütz. A. C. P. 221, 133.
" "	"	2.10006, 17°.5	Angelbis Freiburg Inaug. Diss. 1884.
" "	"	2.08905, 20°.5	Angelbis Freiburg Inaug. Diss. 1884.
" "	"	2.10297, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	2.08540, 25°	Perkin. J. P. C. (2), 32, 523.
" "	"	2.05545, 20°	Weegmann. Z. P. C. 2, 218.
Trimethylene bromide	$CH_2Br.CH_2.CH_2Br$	2.0177, 0°	Geromont. A. C. P. 158, 370.
" "	"	1.9839, 13°.5	Reboul. J. C. S. 36, 127.
" "	"	1.9228	Freund. Ber. 14, 2270.
" "	"	2.0060, 0°	Zander. A.C.P. 214, 181.
" "	"	1.7101, 165°	Zander. A.C.P. 214, 181.
" "	"	1.98236, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.96836, 25°	Perkin. J. P. C. (2), 32, 523.
Propylene bromide	$CH_3.CHBr.CH_2Br$	1.7	Reynolds. J. 3, 495.
" "	"	1.974	Cahours. J. 3, 496.
" "	"	1.955, 9°	Reboul. Z. C. 13, 200.
" "	"	1.954, 15°	Linnemann. A. C. P. 136, 53.
" "	"	1.950, 16°	Linnemann. A. C. P. 136, 53.
" "	"	1.943, 17°	Linnemann. A. C. P. 138, 123.
" "	"	1.972, 0°	Erlenmeyer. A. C. P. 139, 226.
" "	"	1.946, 17°	Erlenmeyer. A. C. P. 139, 226.
" "	"	1.9586, 0°	Two products. Friedel and Ladenburg. B. S. C. 8, 146.
" "	"	1.9256, 20°	Two products. Friedel and Ladenburg. B. S. C. 8, 146.
" "	"	1.9710, 0°	Two products. Friedel and Ladenburg. B. S. C. 8, 146.
" "	"	1.9383, 20°	Two products. Friedel and Ladenburg. B. S. C. 8, 146.
" "	"	1.9463, 17°	Linnemann. A. C. P. 161, 42.
" "	"	1.9465, 15°	Linnemann. A. C. P. 161, 42.
" "	"	1.9617, 0°	Zander. A. C. P. 214, 181.
" "	"	1.6944, 141°.7	Zander. A. C. P. 214, 181.
" "	"	1.8893, 18°	Gladstone. Ber. 9, 249.
" "	"	1.910, 21°	Gladstone. Ber. 9, 249.
" "	"	1.94426, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.94474, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.93004, 25°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.93030, 25°	Perkin. J. P. C. (2), 32, 523.

Name.	Formula.	Sp. Gravity.	Authority.
Dimethylmethylene bromide. Methylbromacetol.	$CH_3.CBr_2.CH_3$	1.8149, 0°	Friedel and Ladenburg. B. S. C. 8, 150.
" "	"	1.7825, 20°	
" "	"	1.895, 9°	Reboul. Z. C. 13, 200.
" "	"	1.875, 10°	Reboul.
" "	"	1.84761, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.83140, 25°	
α Butylene bromide	$C_2H_5.CHBr.CH_2Br$	1.876, 0°	Wurtz. J. 22, 365.
" "	"	1.8503, 0°	Grabowsky and Saytzeff. A. C. P. 179, 382.
" "	"	1.8204, 20°	
β Butylene bromide	$CH_3.(CHBr)_2.CH_3$	1,8299, 0°	Wurtz. J. 20, 573.
" "	"	1.8119, 0°	
" "	"	1.8053, 0°	Puchot. Ann. (5), 28, 543.
" "	"	1.7215, 50°.3	
" "	"	1.6378, 100°	
" "	"	1.74343, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.75586, 15°	
" "	"	1.73083, 25°	
" "	"	1.74294, 25°	
Isobutylene bromide	$C_4H_8Br_2$	1.798, 14°	Two samples. Linnemann. A. C. P. 162, 1.
" "	"	1.809, 17°	
" "	"	1.808, 24°	Studer. Ber. 14, 2188.
Ethylmethylethylene bromide. " "	$C_2H_5.(CHBr)_2.CH_3$ "	1.7087, 0°	Wagner and Saytzeff. A. C. P. 179, 308.
		1.6868, 14°	
Isoamylene bromide	$C_5H_{10}Br_2$	1.3443, 0°	Helbing. A. C. P. 172, 281.
" "	"	1.656, 21°	Gladstone. Ber. 9, 249.
" "	"	1.63699, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.64000, 15°	
" "	"	1.62595, 25°	
" "	"	1.62921, 25°	
Hexylene bromide	$C_6H_{12}Br_2$	1.582, 19°	Pelouze and Cahours. J. 16, 526.
" "	"	1.5975, 18°	Thorpe and Young. A. C. P. 165, 1.
" "	"	1.5967, 20°	
" "	"	1.6058, 0°	Hecht and Strauss. A. C. P. 172, 62.
" "	"	1.5809, 19°	
" "	"	1.6497, 0°	Helbing. A. C. P. 172, 281.
Heptylene bromide	$C_7H_{14}Br_2$	1.5146, 18°.5	Thorpe and Young A. C. P. 165, 1.

3d. Miscellaneous Non-Aromatic Bromides.

Name.	Formula.	Sp. Gravity.	Authority.
Bromoform	$CHBr_3$	2.13	Löwig. A. C. P. 3, 296.
"	"	2.9, 12°	Cahours. J. 1, 501.
"	"	2.775, 14°.5	Schmidt. Ber. 10, 194.
"	"	2.81185, 8°.56	Thorpe. J. C. S. 37, 201 and 371.
"	"	2.43611, 151°.2	Thorpe. J. C. S. 37, 201 and 371.
"	"	2.90246, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	2.90450, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	2.88253, 25°	Perkin. J. P. C. (2), 32, 523.
"	"	2.88421, 25°	Perkin. J. P. C. (2), 32, 523.
Bromethylene dibromide	$CH_2Br.CHBr_2$	2.620, 23°	Wurtz. J. 10, 461.
" "	"	2.663, 0°	Simpson. J. 10, 461.
" "	"	2.659, 0°	Caventou. J. 14, 608.
" "	"	2.624, 16°	Tawildarow. A. C. P. 176, 21.
" "	"	2.65, 0°	Demole. Ber. 9, 49.
" "	"	2.6189, 17°.5	Anschütz. A. C. P. 221, 61.
" "	"	2.6107, 21°.5	Anschütz. A. C. P. 221, 61.
" "	"	2.57896, 20°	Weegmann. Z. P. C. 2, 218.
Tetrabromethane	$CH_2Br.CBr_3$	2.88, 22°	Reboul. Z. C. 13, 200.
"	"	2.93	Bourgoin. J. C. S. 32, 443.
"	"	2.9292, 17°.5	Anschütz. A. C. P. 221, 133.
"	"	2.9216, 21°.5	Anschütz. A. C. P. 221, 133.
"	"	2.88249, 16°.6	Weegmann. Z. P. C. 2, 218.
"	"	2.87687, 19°.1	Weegmann. Z. P. C. 2, 218.
"	"	2.87482, 20°	Weegmann. Z. P. C. 2, 218.
"	"	2.87214, 21°.2	Weegmann. Z. P. C. 2, 218.
"	"	2.86512, 24°.3	Weegmann. Z. P. C. 2, 218.
"	"	2.85836, 27°.3	Weegmann. Z. P. C. 2, 218.
"	"	2.85189, 30°.2	Weegmann. Z. P. C. 2, 218.
Acetylene tetrabromide	$CHBr_2.CHBr_2$	2.848, 21°.5	Sabanejeff. A. C. P. 178, 114.
" "	"	2.9469, 17°.5	Anschütz. Ber. 12, 2075.
" "	"	2.9517, 17°.5	Anschütz. Ber. 12, 2075.
" "	"	2.9708, 17°.5	Anschütz. A. C. P. 221, 133.
" "	"	2.9712, 17°.5	Anschütz. A. C. P. 221, 133.
" "	"	2.9629, 21°.5	Anschütz. A. C. P. 221, 133.
" "	"	2.92011, 17°.5	Eltzbacher. Bonn Inaug. Diss. 1884.
" "	"	2.96725, 20°	Weegmann. Z. P. C. 2, 218.
Bromethylene, or vinyl bromide.	C_2H_3Br	1.52	Watts' Dictionary.
" "	"	1.5286, 11°	Anschütz. A. C. P. 221, 133.
" "	"	1.5167, 14°	Anschütz. A. C. P. 221, 133.
" "	"	1.52504, 9°.6	Perkin. J. P. C. (2), 32, 523.
Dibromethylene	$C_2H_2Br_2$	3.038, 10°	Sawitsch. J. 13, 431.
"	"	3.053, 14°.5	Sawitsch. J. 13, 431.
"	"	2.1780, 20°.6	Anschütz. A. C. P. 221, 133.

Name.	Formula.	Sp. Gravity.	Authority.
Acetylene dibromide	$C_2 H_2 Br_2$	2.120, 17°	Tawildarow. A. C. P. 176, 23.
" "	"	2.2023, 22°.7	Sabanejeff. B. S. C. 27, 371.
" "	"	2.268, 0°	Plimpton. Ber. 14, 1812.
" "	"	2.271, 0°	Sabanejeff. Ber. 16, 1220.
" "	"	2.223, 19°	
" "	"	2.2714, 17°.5	Anschütz. A. C. P. 221, 133.
" "	"	2.2983, 0°	Weger. A. C. P. 221, 61.
" "	"	2.0352, 110°.5	
" "	"	2.22889, 20°	Weegmann. Z. P. C. 2, 218.
Tribromethylene	$C_2 H Br_3$	2.68762, 20°	" "
Tribrompropane	$CH_3. CBr_2. CH_2 Br$	2.336	Cahours. J. 3, 496.
"	"	2.392, 23°	Wurtz. J. 10, 462.
"	"	2.39, 10°	Linnemann. J. 18, 490.
"	"	2.33, 12°	Reboul. J. C. S. 36, 127.
"	$CH_3. CHBr. CHBr_2$	2.356, 18°	Reboul. C. R. 79, 317.
Tribromhydrin	$CH_2Br. CHBr. CH_2Br$	2.436, 23°	Wurtz. J. 10, 463.
"	"	2.966, 0°	Perrot. J. 11, 395.
"	"	2.407, 10°	Henry. A. C. P. 154, 370.
"	"	2.41344, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	2.39856, 25°	
Tetrabrompropane	$C_3 H_4 Br_4$	2.469	Cahours. J. 3, 496.
Allylene tetrabromide	$CH_3. CBr_2. CH Br_2$	2.94, 0°	Oppenheim. J. 17, 493.
Tetrabromglycide	$CHBr_2. CHBr. CH_2Br$	2.64	Reboul. J. 13, 462.
Pentabrompropane	$C_3 H_3 Br_5$	2.601	Cahours. J. 3, 496.
α Brompropylene	$C_3 H_5 Br$	1.364, 19°.5	Reboul. C. R. 79, 317.
"	"	1.39, 9°	Reboul. J. C. S. 36, 127.
"	"	1.42077, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	1.40527, 25°	
β Brompropylene	"	1.400, 13°	Linnemann. A. C. P. 136, 55.
"	"	1.410, 14°	
"	"	1.408, 19°	Linnemann. J. 19, 308.
"	"	1.4110, 15°	Linnemann. A. C. P. 161, 18.
"	"	1.428, 19°.5	Reboul. C. R. 79, 317.
Allyl bromide	"	1.472	Cahours. J. 3, 496.
" "	"	1.451, 0°	Tollens. J. P. C. 107, 185.
" "	"	1.4385, 15°	
" "	"	1.3609, 62°	
" "	"	1.4507, 0°	Tollens and Henninger. Z. C. 12, 88
" "	"	1.461, 0°	Tollens. A. C. P. 156, 153.
" "	"	1.436, 15°	
" "	"	1.4593, 0°	Zander. A. C. P. 214, 181.
" "	"	1.3333, 70°.5	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Allyl bromide	C_3H_5Br	1.396, 20°.5	Gladstone. Bei. 9, 249.
" "	"	1.3867, 24°.5	
" "	"	1.3980, 20°	Brühl. A. C. P. 235, 1.
" "	"	1.42532, 15°	Perkin. J. P. C. (2), 32, 523.
" "	"	1.41057, 25°	
Epidibromhydrin	$C_3H_4Br_2$	2.06, 11°	Reboul. J. 13, 461.
Allylene bromide	"	1.950	Cahours. J. 8, 496.
" "	"	2.05, 0°	Oppenheim. J. 17, 493.
" "	"	2.00, 15°	Borsche and Fittig. J. 18, 314.
" "	"	1.98, 15°	Linnemann. J. 18, 490.
Propargyl tribromide	$C_3H_3Br_3$	2.53, 10°	Henry. Ber. 7, 761.
Propargyl bromide	C_3H_3Br	1.52, 20°	Henry. B. S. C. 20, 452.
" "	"	1.59, 11°	Henry. Ber. 7, 761.
Propargyl pentabromide	$C_3H_3Br_5$	3.01, 10°	" "
Tribromisobutane	$C_4H_7Br_3$	2.187, 17°	Norton and Williams. A. C. J. 9, 88.
Bromamylene	C_5H_9Br	1.22, 19°	Linnemann. Z. C. 11, 58.
Isoprene bromide	"	1.175, 15°	Bouchardat. J. C. S. 38, 828.
Isoprene dibromide	$C_5H_8Br_2$	1.601, 15°	" "
Bromhexylene. B. 99°–100°.	$C_6H_{11}Br$	1.35, 12°	Destrem. Ann. (5), 27, 50.
" B. 138°	"	1.17, 15°	Reboul and Truchot. J. 20, 587.
" B. 140°	"	1.2205, 0°	Hecht and Strauss. A. C. P. 172, 62.
"	"	1.2025, 15°	
Hexine dibromide	$C_6H_{10}Br_2$	1.6977, 0°	Hecht. Ber. 11, 1054.
" "	"	1.5543, 100°	
Hexine tetrabromide	$C_6H_{10}Br_4$	2.1625, 0°	" "
Dibromdiallyl	$C_6H_8Br_2$	1.656	Henry. J. C. S. (2), 11, 1215.
Dipropargyl tetrabromide	$C_6H_6Br_4$	2.464, 19°	Henry. Ber. 7, 761.
Conylene bromide	$C_8H_{14}Br_2$	1.5679, 16°.25	Wertheim. J. 15, 367.
Bromdecylene	$C_{10}H_{19}Br$	1.109, 15°	Reboul and Truchot. J. 28, 588.
Isovinyl bromide	$(C_2H_3Br)_n$	2.075	Baumann. A. C. P. 163, 308.
Erythrene hexbromide	$C_4H_6Br_6$	2.9, 15°, 1	Colson. B. S. C. 48, 52. Two modifications.
" "	"	3.4, solid	

4th. Aromatic Compounds.

Name.	Formula.	Sp. Gravity.	Authority.
Brombenzene	C_6H_5Br	1.519 } 0°	Ladenburg. Ber. 7, 1685.
"	"	1.522 } 0°	
"	"	1.51768, 0°	Adrieenz. Ber. 6, 444.
"	"	1.50236, 11°.46	
"	"	1.48977, 20°.96	
"	"	1.41168, 77°.76	
"	"	1.4914, 20°	Brühl. Bei. 4, 780.
"	"	1.5203, 0°	Weger. A. C. P. 221, 61.
"	"	1.3080, 155°.6	
"	"	1.4958, 16°	Gladstone. Bei. 9, 249.
"	"	1.49225, 23°	
"	"	1.3080, 155°	Schiff. Bei. 9, 559.
"	"	1.3090, 156°	Schiff. Ber. 19, 560.
Orthodibrombenzene	$C_6H_4Br_2$	2.003, 0°	Körner. J. C. S. (3), 1, 214.
"	"	1.858, 99°	
Metadibrombenzene	"	1.955, 18°.6	" "
Paradibrombenzene	"	2.218 } 4°	Schröder. Ber. 12, 561.
"	"	2.222 } 4°	
"	"	1.8408, 89°.3	Schiff. A. C. P. 223, 247.
Benzyl bromide	$C_6H_5.CH_2Br$	1.438, 22°	Kekulé. J. 20, 662.
Orthobromtoluene	$C_6H_4.CH_3.Br$	1.4092, 21°.5	Glinzer and Fittig. J. 18, 538.
"	"	1.4109, 22°	Kekulé. J. 20, 663.
"	"	1.401, 18°	Wroblevsky. A. C. P. 168, 147.
"	"	1.2031, 182°.5	Schiff. Ber. 19, 560.
Metabromtoluene	"	1.4009, 21°	Wroblevsky. Z. C. 18, 239.
Parabromtoluene	"	1.3999, 30°	Hübner and Terry. Z. C. 14, 282.
Dibromtoluene. B. 236°	$C_6H_3.CH_3.Br_2$	1.8127, 19°	Wroblevsky. Z. C. 18, 239.
" B. 238°-239°	"	1.812, 19°	" "
" B. 246°	"	1.812, 22°	Wroblevsky. Z. C. 14, 272.
Ethylbrombenzene. 1.4	$C_6H_4.C_2H_5.Br$	1.34, 18°.5	Fittig and Koenig. J. 20, 609.
Bromxylene	$C_6H_3.CH_3.CH_3.Br$	1.335, 21°	Beilstein. J. 17, 530.
" 1.2.4	"	1.3698, 15°	Jacobsen. Ber. 17, 2378.
" 1.3.5	"	1.362, 20°	Wroblevsky. A. C. P. 192, 215.
Metaxylyl bromide	$C_6H_4.CH_3.CH_2Br$	1.3711, 23°	Radziszewski and Wispek. Ber. 15, 1745.
Orthoxylyl bromide	"	1.3811, 23°	Radziszewski and Wispek. Ber. 15, 1747.
Dibromorthoxylene	$C_6H_2.(CH_3)_2Br_2$	1.7842, 15°	Jacobsen. Ber. 17, 2377.
Orthoxylylene bromide	$C_6H_4(CH_2Br)_2$	1.934, 0°, s.	Colson. Ann. (6), 6, 86.
" "	"	1.680, 95°, l.	

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Orthoxylylene bromide	$C_6H_4(CH_2Br)_2$	1.988	Colson. C. R. 104, 429.
Metaxylylene bromide	"	1.784, 0°, s.	Colson. Ann. (6), 6, 86.
" "	"	1.615, 80°, l.	
" "	"	1.959	Colson. C. R. 104, 429.
Paraxylylene bromide	"	2.010, s.	Colson. Ann. (6), 6, 86.
" "	"	1.850, 155°, l.	
" "	"	2.012	Colson. C. R. 104, 429.
Brommesitylene. 1.3.5.6	$C_6H_2(CH_3)_3.Br$	1.3191, 10°	Fittig and J. Storer, J. 20, 704.
Isopropylbrombenzene. 1.4.	$C_6H_4.C_3H_7.Br$	1.3228, 13°	Meusel. J. 20, 698.
" "	"	1.3014, 15°	Jacobsen. Ber. 12, 430.
Dibromcymene	$C_{10}H_{12}Br_2$	1.596	Claus and Wimmel. Ber. 13, 903.
β Bromamylbenzene	$C_{11}H_{15}Br$	1.2834, 21°	Dafert. M. C. 4, 621.
Benzene hexbromide	$C_6H_6Br_6$	2.5 +	Meunier. Ann. (6), 10, 223.
Bromdibenzyl	$C_{14}H_{13}Br$	1.318, 9°	Stelling and Fittig.
Bromnaphthalene	$C_{10}H_7Br$	1.555	Glaser. J. 18, 562.
"	"	1.503, 12°	Wahlforss. J. 18, 564.
"	"	1.48875, 16°.5	Nasini and Bernheimer. G. C. I. 15, 50.
"	"	1.47496, 28°.1	
"	"	1.42572, 77°.6	
"	"	1.5678, 16°.5	Gladstone. Bei. 9, 249.
"	"	1.5403, 17°	
"	"	1.5403, 18°	
" β	"	1.605, 0°	Roux. B. S. C. 45, 514.
α Tetrabromhydrocamphene.	$C_{10}H_{14}Br_4$	2.2042	Royère. Ber. 19, ref. 438.
β Tetrabromhydrocamphene.	"	1.93711	" "

LVI. COMPOUNDS CONTAINING C, H, O, AND BR.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
αβ Dibrompropyl alcohol	$C_3H_6Br_2O$	2.1682, 0°	Weger. A. C. P. 221, 61.
" "	"	1.7535, 219°	
Monobromtrimethylcarbinol.	C_4H_9BrO	1.429, 0°	Guareschi and Garzino. J. C. S. 54, 437.
Dibromhexyl alcohol	$C_6H_{12}Br_2O$	1.99, 15°	Destrem. Ann. (5), 27, 50.
Bromethyl oxide	C_4H_9BrO	1.3704, 0°	Henry. C. R. 100, 1007.
Bromacetyl bromide	$C_2H_2Br_2O$	2.317, 21°.5	Naumann. J. 17, 322.
Propionyl bromide	$C_3H_5O.Br$	1.465, 14°	Sestini. J. 22, 528.

Name.	Formula.	Sp. Gravity.	Authority.
Dibromacetic acid	$C_2 H_2 Br_2 O_2$	2.25	Perkin and Duppa. J. 11, 285.
Bromobutyric acid	$C_4 H_7 Br O_2$	1.54, 15°	Schneider. J. 14, 457.
Bromisobutyric acid	"	1.5225, 60°	Hell and Waldbauer. Ber. 10, 448.
" "	"	1.500, 100°	
Dibromobutyric acid	$C_4 H_6 Br_2 O_2$	1.97	Schneider. J. 14, 458.
Bromostearic acid	$C_{18} H_{35} Br O_2$	1.0653, 20°	Oudemans. J. P. C. 89, 197.
Ethyl bromacetate	$C_4 H_7 Br O_2$	1.5250, 18°	Gladstone. Bei. 9, 249.
Dibromethyl acetate	$C_4 H_6 Br_2 O_2$	1.962, 17°	Kessel. Ber. 10, 1996.
Ethyl brompropionate	$C_5 H_9 Br O_2$	1.396, 11°	Henry. A. C. P. 156, 176.
Methyl dibrompropionate. α.	$C_4 H_6 Br_2 O_2$	1.9043, 0°	Philippi. Göttingen Inaug. Diss. 1873.
" "	"	1.8973, 12°	
" " αβ	"	1.9777, 0°	Weger. A. C. P. 221, 61.
" " "	"	1.6140, 205°.8	
Ethyl dibrompropionate. α	$C_5 H_8 Br_2 O_2$	1.7728, 0°	Philippi. Gött. Inaug. Diss. 1873.
" "	"	1.7586, 12°	
" " β	"	1.796, 0°	Münder and Tollens. A. C. P. 167, 222.
" " "	"	1.777, 15°	
" " αβ	"	1.8234 0°	Weger. A. C. P. 221, 61.
" " "	"	1.8279 0°	
" " "	"	1.4554, 214°.6	
Propyl dibrompropionate.	$C_6 H_{10} Br_2 O_2$	1.6842, 0°	Philippi. Gött. Inaug. Diss. 1873.
" " α	"	1.6682, 12°	
" " αβ	"	1.7014, 0°	Weger. A. C. P. 221, 61.
" " "	"	1.3391, 233°	
Butyl dibrompropionate. α	$C_7 H_{12} Br_2 O_2$	1.6008, 0°	Philippi. Gött. Inaug. Diss. 1873.
" " "	"	1.5778, 12°	
Methyl brombutyrate. γ	$C_5 H_9 Br O_2$	1.450, 5°	Henry. C. R. 102, 368.
Ethyl brombutyrate	$C_6 H_{11} Br O_2$	1.33, 15°	Schneider. J. 14, 458.
" "	"	1.345, 12°	Cahours. J. 15, 248.
" " γ	"	1.363, 5°	Henry. C. R. 102, 368.
Ethyl bromisobutyrate	"	1.328, 0°	Hell and Wittekind. Ber. 7, 319.
" "	"	1.300, 19°.5	
Ethyl bromvalerate. α	$C_7 H_{13} Br O_2$	1.226, 18°	Juslin. Ber. 17, 2504.
Ethyl bromethylmethylacetate. α.	"	1.2275, 18°	Böcking. A. C. P. 204, 24.
Bromal	$C_2 H Br_3 O$	3.34	Löwig. A. C. P. 3, 305.
Parabromalide	"	3.107	Cloëz. J. 12, 433.
Bromacetone	$C_3 H_5 Br O$	1.99	Sokolowsky. B. S. C. 27, 371.
Dibromacetone	$C_3 H_4 Br_2 O$	2.5	" "
Hexbromethylmethyl ketone.	$C_4 H_2 Br_6 O$	2.88, 0°	Demole. Ber. 11, 1712.
Ethylene bromhydrin	$C_2 H_4 . Br. O H$	1.66, 8°	Henry. Ann. (4), 27, 243.
Bromethylene bromhydrin	$C_2 H_3 Br. Br. O H$	2.35, 0°	Demole. Ber. 9, 50.
Bromethylene bromacetin	$C_2 H_3 Br. Br. C_2 H_3 O_2$	1.98, 0°	Demole. Ber. 9, 51.
Ethylidene bromethylate	$C_2 H_4 . Br. O C_2 H_5$	1.0632, 12°	Henry. C. R. 100, 1007.

Name.	Formula.	Sp. Gravity.	Authority.
Trimethylene bromhydrin	$C_3 H_6 . Br. O H$	1.5374, 20°	Frühling. Ber. 15, 2622.
Ethoxybromamylene	$C_5 H_8 Br. O C_2 H_5$	1.23, 19°	Reboul. J. 17, 507.
Hexylene bromhydrin	$C_6 H_{12} . Br. O H$	1.2959, 11°	Henry. C. R. 97, 260.
Ethyl bromacetacetate	$C_6 H_9 Br O_3$	1.511, 22°	Duisberg. Ber. 15, 1878.
Ethyl dibromacetacetate	$C_6 H_8 Br_2 O_3$	1.884, 25°	" "
Ethyl tribromacetacetate	$C_6 H_7 Br_3 O_3$	2.144, 22°	" "
Ethyl tetrabromacetacetate.	$C_6 H_6 Br_4 O_3$	2.401, 17°	" "
Dibromide of dibromacetacetic ether.	$C_6 H_8 Br_4 O_3$. ?	2.320, 21°	Conrad. A. C. P. 186, 238. Compare Ber. 15, 2133.
Ethyl bromethylacetacetate.	$C_8 H_{13} Br O_3$	1.354	Wedel. A. C. P. 219, 102.
Ethyl dibromethylacetacetate.	$C_8 H_{12} Br_2 O_3$	1.635	Wedel. A. C. P. 219, 103.
Ethyl tribromethylacetacetate.	$C_8 H_{11} Br_3 O_3$	1.860	" "
Ethyl β bromacetopropionate.	$C_7 H_{11} Br O_3$	1.439, 15°	Conrad and Guthzeit. Ber. 17, 2286.
Ethyl brompropiopropionate.	$C_8 H_{13} Br O_3$	1.337, 15°	Israel. A. C. P. 231, 197.
Ethyl dibrompropiopropionate.	$C_8 H_{12} Br_2 O_3$	1.611, 15°	" "
Bromallyl alcohol	$C_3 H_5 Br O$	1.6, 15°	Henry. B. S. C. 18, 232.
Bromallyl acetate	$C_5 H_7 Br O_2$	1.57, 12°	" "
Allyldibrompropionate. β	$C_6 H_8 Br_2 O_2$	1.843, 0°	Münder and Tollens. A. C. P. 167, 222.
" "	"	1.818, 20°	
Dibromallyl oxide	$C_6 H_8 Br_2 O$	1.7, 17°	Henry. B. S. C. 20, 452.
Brommethylallyl oxide	$C_4 H_7 Br O$	1.35, 10°	Henry. B. S. C. 18, 232.
Bromethylallyl oxide	$C_5 H_9 Br O$	1.27, 12°	Henry. Ber. 5, 186.
Monobromhydrin	$C_3 H_5 . Br (O H)_2$	1.717, 4°	Veley. C. N. 47, 89.
Dibromhydrin	$C_3 H_5 . Br_2 O H$	2.11, 10°	Berthelot and De Luca. J. 8, 627.
"	"	2.11, 18°	Berthelot and De Luca. J. 9, 601.
"	"	2.02, 18°.5	Zotta. A. C. P. 174, 87.
Epibromhydlin	$C_3 H_5 Br O$	1.615, 14°	Berthelot and De Luca. J. 9, 600.
Bromdiethylin	$C_3 H_5 . Br (O C_2 H_5)_2$	1.258, 8°	Henry. Ber. 4, 701.
Diethyl brommaleate	$C_8 H_{11} Br O_4$	1.4095, 17°.5	Anschütz and Aschman. Ber. 12, 2284.
Dibromoleic acid	$C_{18} H_{32} Br_2 O_2$	1.272, 7°.5	Lefort. J. 6, 451.
Bromcitropyrotartaric anhydride.	$C_5 H_3 Br O_3$	1.935, 23°	Bourgoin. J. Ph. C. 26, 234.
Ethyl δ brompyromucate	$C_7 H_7 Br O_3$	1.528, 0°	Hill and Sanger. A. C. P. 232, 52.
Orthomonobromphenol	$C_6 H_5 Br O$	1.6606, 30°	Körner. J. 19, 574.
Paramonobromphenol	"	1.840, 15°	Hand. A. C. P. 234, 133.

Name.	Formula.	Sp. Gravity.	Authority.
Brommethylphenol	$C_7 H_7 Br O$	1.494, 9°	Henry. Z. C. 13, 247.
Bromparakresol	"	1.5468, 24°.5	Schall and Dralle. Ber. 17, 2531.
Brommethylparakresol	$C_8 H_9 Br O$	1.4182, 24°.5	" "
Bromisopropylphenol	$C_9 H_{11} Br O$	1.981, 0°	Silva. B.S.C., Jan., 1870.
"	"	1.957, 12°.5	
Bromallylphenol ether	$C_9 H_9 Br O$	1.4028, 11°	Henry. Ber. 16, 1878.
Brommethyleugenol	$C_{11} H_{13} Br O_2$	1.3959, 0°	Wassermann. C. R. 88, 1207.
Benzoyl bromide	$C_7 H_5 O. Br$	1.5700, 15°	Claisen. Ber. 14, 2473.
Monobromcamphor	$C_{10} H_{15} Br O$	1.487	Schröder. Ber. 13, 1070.
"	"	1.449	
Santonyl bromide		1.4646	Carnelutti and Nasini. Ber. 13, 2210.

LVII. BROMINE COMPOUNDS CONTAINING NITROGEN.

Name.	Formula.	Sp. Gravity.	Authority.
Brompicrin	$C Br_3 N O_2$	2.811, 12°.5	Bolas and Groves. Z. C. 13, 414.
"	"	2.816, 18°	Gladstone. Bei. 9, 249.
Tetranitroethylene bromide.	$C_2 (N O_2)_4 Br_2$	1.25, 14°	Villiers. J. C. S. 42, 815.
Bromonitric glycol	$C_2 H_4 Br N O_3$	1.735, 8°	Henry. Ann. (4), 27, 243.
Bromallyl nitrate	$C_3 H_4 Br N O_3$	1.5, 18°	Henry. B. S. C. 18, 232.
Nitrobromtoluene. B. 269°	$C_7 H_6 Br N O_2$	1.612, 20°	Wroblevsky. Z. C. 13, 240.
" B. 256°	"	1.631, 18°	Wroblevsky. Z. C. 13, 166.
Bromtoluidine. B. 240°	$C_7 H_8 Br N$	1.510, 20°	Wroblevsky. A. C. P. 168, 147.
" B. 255°-260°	"	1.1442, 19°	Wroblevsky. A. C. P. 192, 203.
Brompyridine	$C_5 H_4 Br N$	1.645, 0°	Ciamician and Dennstedt. Ber. 15, 1174.
"	"	1.646, 0°	Danesi. Ber. 15, 1177.
"	"	1.632, 10°	Hofmann. Ber. 16, 589.

LVIII. COMPOUNDS CONTAINING C, H, AND I.

1st. Iodides of the Paraffin Series.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl iodide	$C H_3 I$	2.237, 22°	Dumas and Peligot. Ann. (2), 58, 30.
" "	"	2.19922, 0°	Pierre. C. R. 27, 213.
" "	"	2.2636, 20°	Haagen. P. A. 131, 117.
" "	"	2.269, 25°	Linnemann. Z. C. 11, 285.
" "	"	2.2905, 16°	Sigel. A. C. P. 170, 345.
" "	"	2.1905, 42°	Ramsay. J. C. S. 35, 463.
" "	"	2.28517, 15°	Perkin. J. P. C. (2),
" "	"	2.25288, 25°	31, 481.
" "	"	2.3346, 0°	Dobriner. A. C. P.
" "	"	2.2146, 42°.8	243, 23.
Ethyl iodide	$C_2 H_5 I$	1.9206, 23°.3	Gay Lussac. Ann. (1), 91, 91.
" "	"	1.92, 16°	Marchand. J. P. C. 33, 188.
" "	"	1.97546, 0°	Pierre. C. R. 27, 213.
" "	"	1.9567, 5°–10°	
" "	"	1.9457, 10°–15°	Regnault. P. A.
" "	"	1.9348, 15°–20°	62, 50.
" "	"	1.9464, 16°	Frankland. J. 2, 412.
" "	"	1.9309, 15°	Mendelejeff. J. 13, 7.
" "	"	1.98, 4°	Berthelot. A. C. P. 115, 114.
" "	"	1.927, 20°	Linnemann. A. C. P. 144, 133.
" "	"	1.9265, 19°	Linnemann. A. C. P. 148, 251.
" "	"	1.935 } 20°	Haagen. P. A. 131,
" "	"	1.938 }	117.
" "	"	1.979, 0°	Pierre and Puchot.
" "	"	1.907, 30°.4	Ann. (4), 22, 261.
" "	"	1.9444, 14°.5	Linnemann. A. C. P. 160, 195.
" "	"	1.944, 15°	Crismer. Ber. 17, 652.
" "	"	1.9313, 14°	Gladstone. Ber. 9, 249.
" "	"	1.8111, 72°.2	Schiff. Ber. 19, 560.
" "	"	1.96527, 4°	
" "	"	1.94332, 15°	Perkin. J. P. C. (2),
" "	"	1.92431, 25°	31, 481.
" "	"	1.9795, 0°	Dobriner. A. C. P.
" "	"	1.8156, 72°.5	243, 23.
Propyl iodide	$C_3 H_7 I$	1.789, 16°	Berthelot and De Luca. J. 7, 452.
" "	"	1.7012, 21°	Linnemann. J. 21, 433.

Name.	Formula.	Sp. Gravity.	Authority.
Propyl iodide	C_3H_7I	1.7343, 16°	Chapman and Smith. J. C. S. 22, 195.
" "	"	1.782, 0°	Rossi. A. C. P. 159, 79.
" "	"	1.7472, 16°	Linnemann. A. C. P. 160, 195.
" "	"	1.7377, 23°	Linnemann. A. C. P. 161, 25.
" "	"	1.7610, 16°	Linnemann. A. C. P. 161, 34.
" "	"	1.78635, 0°	Brown. J. C. S. 32, 887.
" "	"	1.75035, 19°.27	
" "	"	1.74772, 20°.79	
" "	"	1.74628, 20°.91	
" "	"	1.7427, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.7483, 14°	De Heen. Bei. 5, 105.
" "	"	1.5867, 102°.5	Zander. A. C. P. 214, 181.
" "	"	1.7838, 0°	Chancel. B. S. C. 39, 648.
" "	"	1.7508, 16°	Gladstone. Bei. 9, 249.
" "	"	1.7842, 0°	Pierre and Puchot. Ann. (4), 22, 286.
" "	"	1.7674, 9°.1	
" "	"	1.6843, 52°.6	
" "	"	1.6378, 75°.3	
" "	"	1.76732, 10°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.75858, 15°	
" "	"	1.7829, 0°	Dobriner. A. C. P. 243, 23.
" "	"	1.585, 102°.5	
Isopropyl iodide	"	1.70, 15°	Linnemann. J. 18, 489.
" "	"	1.714, 16°	Erlenmeyer. A. C. P. 126, 309.
" "	"	1.73, 0°	Simpson. A. C. P. 129, 128.
" "	"	1.725, 0°	Wurtz. See A. C. P. 136, 48.
" "	"	1.69, 15°	Linnemann. A. C. P., 3d Supp., 265.
" "	"	1.71, 15°	Linnemann. A. C. P., 3d Supp., 267.
" "	"	1.735, 0°	Erlenmeyer. A. C. P. 139, 229.
" "	"	1.711, 17°	
" "	"	1.71782, 17°	H. L. Buff. A. C. P., 4th Supp., 129.
" "	"	1.562442, 93°	
" "	"	1.70, 18°	Linnemann. A. C. P. 140, 178.
" "	"	1.715, 15°.5	Siersch. A. C. P. 140, 142.
" "	"	1.7109, 15°	Linnemann. A. C. P. 161, 18.
" "	"	1.744, 0°	Brown. J. C. S. 32, 887.
" "	"	1.70526, 19°.8	
" "	"	1.70506, 20°.14	
" "	"	1.70457, 21°.09	

Name.	Formula.	Sp. Gravity.	Authority.
Isopropyl iodide	C_3H_7I	1.7033, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.5650, 89°	Zander. A. C. P. 214, 181.
" "	"	1.7157, 14°	Gladstone. Bei. 9, 249.
" "	"	1.71680, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.70049, 25°	
Butyl iodide	C_4H_9I	1.643, 0°	Lieben and Rossi. A. C. P. 158, 137.
" "	"	1.6136, 20°	
" "	"	1.5894, 40°	
" "	"	1.5804, 18°	Linnemann. Ann. (4), 27, 268.
" "	"	1.6166, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.6172, 14°	De Heen. Bei. 5, 105.
" "	"	1.6476, 0°	Dobriner. A. C. P. 248, 23.
" "	"	1.4308, 129°.9	
Secondary butyl iodide	"	1.632, 0°	De Luynes. J. 17, 499.
" " "	"	1.600, 20°	
" " "	"	1.584, 30°	
" " "	"	1.6263, 0°	Lieben. J. 21, 439.
" " "	"	1.6111, 10°	
" " "	"	1.5952, 20°	
" " "	"	1.5787, 30°	
" " "	"	1.634, 0°	Wurtz. A. C. P. 152, 23.
Isobutyl iodide	"	1.604, 19°	Wurtz. J. 7, 573.
" "	"	1.643, 0°	Wurtz. J. 20, 578.
" "	"	1.6301, 0°	Chapman and Smith. J. C. S. 22, 156.
" "	"	1.6032, 16°	
" "	"	1.54816, 50°	
" "	"	1.6345, 0°	Pierre and Puchot. Ann. (4), 22, 317.
" "	"	1.6214, 8°.8	
" "	"	1.6387, 56°.4	
" "	"	1.464, 98°.8	
" "	"	1.6081, 19°.5	Linnemann. A. C. P. 160, 195.
" "	"	1.592, 22°	Linnemann. Ann. (4), 27, 268.
" "	"	1.6438, 0°	Erlenmeyer and Hell. A. C. P. 160, 257.
" "	"	1.6278, 10°	
" "	"	1.6114, 20°	
" "	"	1.6401, 0°	Brauner. A. C. P. 192, 69.
" "	"	1.6050, 20°	
" "	"	1.6056, 20°	Brühl. A. C. P. 203, 1.
" "	"	1.5982	Gladstone. Bei. 9, 249.
" "	"	1.4335, 114°.5	Schiff. Ber. 19, 560.
" "	"	1.61385, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.60066, 25°	
Trimethylcarbyl iodide. ?	"	1.587, 0°	Two lots. Puchot. Ann. (5), 28, 546.
" "	"	1.501, 50°.1	
" "	"	1.571, 0°	
" "	"	1.479, 53°	
Normal pentyl iodide	$C_5H_{11}I$	1.5435, 0°	Lieben and Rossi. A. C. P. 159, 70.
" " "	"	1.5174, 20°	

Name.	Formula.	Sp. Gravity.	Authority.
Normal pentyl iodide	$C_5H_{11}I$	1.4961, 40°	Lieben and Rossi. A. C. P. 159, 70.
" " "	"	1.5444, 0°	Dobriner. A. C. P. 243, 20.
" " "	"	1.3128, 151°.7	
Amyl iodide	"	1.51118, 11°.5	Frankland. J. 8, 478.
" "	"	1.5277, 0°	Frankland.
" "	"	1.4936, 20°	Grimm. J. 7, 543.
" "	"	1.4676, 0°	Kopp. A. C. P. 95, 307.
" "	"	1.4387, 22°.3	
" "	"	1.5087, 15°.8	Mendelejeff. J. 13, 7.
" "	"	1.4734, 20°	Haagen. P. A. 131, 117.
" "	"	1.5005, 14°	De Heen. Bei. 5, 105.
" "	"	1.5413, 0°	Flawitzky. Ber. 15, 11.
" "	"	1.5084, 23°	
" "	"	1.5048, 14°	Gladstone. Bei. 9, 249.
" "	"	1.3098, 148°	Schiff. Ber. 19, 560.
" "	"	1.5100, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.49811, 25°	
" " Active	"	1.54, 15°	Le Bel. B. S. C. 25, 545.
" " "	"	1.5425, 16°	Just. A. C. P. 220, 150.
Methylpropylcarbyl iodide	"	1.537, 0°	Wurtz. J. 21, 446.
" "	"	1.5219, 11°	
" "	"	1.539, 0°	Wagner and Saytzeff. A. C. P. 179, 318.
" "	"	1.510, 20°	
" "	"	1.499, 15°	Romburgh. Ber. 16, 392.
Diethylcarbyl iodide	"	1.528, 0°	Wagner and Saytzeff. A. C. P. 175, 365.
" "	"	1.505, 16°	
" "	"	1.4792	Gladstone. Bei. 9, 249.
" "	"	1.528, 0°	Wagner and Saytzeff. A. C. P. 179, 318.
" "	"	1.501, 20°	
Dimethylethylcarbyl iodide.	"	1.5207, 0°	Flawitzky. A. C. P. 179, 348.
" "	"	1.4954, 19°	
" "	"	1.524, 0°	Wischnegradsky. A. C. P. 190, 334.
" "	"	1.497, 19°	
" "	"	1.522, 0°	Winogradow. A. C. P. 191, 125.
" "	"	1.498, 18°	
Hexyl iodide	$C_6H_{13}I$	1.431, 19°	Pelouze and Cahours. J. 16, 526.
" "	"	1.4115	Franchimont and Zincke. C. N. 24, 263.
" "	"	1.4607, 0°	Lieben and Janecek. J. R. C. 5, 156.
" "	"	1.4363, 20°	
" "	"	1.4178, 40°	
" "	"	1.4661, 0°	Dobriner. A. C. P. 243, 23.
" "	"	1.2165, 177°.1	
Secondary hexyl iodide	"	1.439	Wanklyn and Erlenmeyer. J. 14, 782.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Secondary hexyl iodide	$C_6H_{13}I$	1.4447, 0°	Wanklyn and Erlenmeyer. J. 16, 518.
" " "	"	1.3812, 50°	
" " "	"	1.4526, 0°	Hecht. A. C. P. 165, 146.
" " "	"	1.4589, 0°	Krusemann. Ber. 9, 1468.
" " "	"	1.3938, 50°	
" " "	"	1.4477, 0°	
" " "	"	1.3808, 50°	
" " "	"	1.4487, 0°	
" " "	"	1.3839, 50°	
" " "	"	1.4193	Gladstone. Bei. 9, 249.
" " "	"	1.42694, 15°	Perkin. J. P. C. (2), 31, 481.
" " "	"	1.41631, 25°	
Dimethylisopropylcarbyl iodide.	"	1.3939, 0°	Pawlow. A. C. P. 196, 122.
"	"	1.3725, 19°	
Pinacolic iodide	"	1.4739, 0°	Friedel and Silva. J. C. S. (2), 11, 488.
Normal heptyl iodide	$C_7H_{15}I$	1.346, 16°	Cross. J. C. S. 32, 123.
" " "	"	1.4008, 0°	Dobriner. A. C. P. 243, 23.
" " "	"	1.1344, 203°.8	
Dipropylcarbyl iodide	"	1.20, 20°	Kurtz. A. C. P. 161, 205.
Normal octyl iodide	$C_8H_{17}I$	1.338, 16°	Zincke. J. 22, 371.
" " "	"	1.355, 0°	Krafft. Ber. 19, 2218.
" " "	"	1.337, 16°	
" " "	"	1.34069, 15°	Perkin. J. P. C. (2), 31, 481.
" " "	"	1.33168, 25°	
" " "	"	1.3533, 0°	Dobriner. A. C. P. 243, 23.
" " "	"	1.075, 225°.5	
Methylhexylcarbyl iodide	"	1.310, 16°	Bouis. J. 8, 526.
" "	"	1.330, 0°	De Clermont. J. 21, 449.
" "	"	1.314, 21°	
Normal nonyl iodide	$C_9H_{19}I$	1.3052, 0°	Krafft. Ber. 19, 2218.
" " "	"	1.2874, 16°	
Normal decyl iodide	$C_{10}H_{21}I$	1.2768, 0°	" "
" " "	"	1.2599, 16°	

2d. Miscellaneous Compounds.

Name.	Formula.	Sp. Gravity.	Authority.
Methylene iodide	$C H_2 I_2$	3.342, 5°	Butlerow. J. 11, 420.
" "	"	3.3188, 19°	Gladstone. Bei. 9, 249.
" "	"	3.326, 15°.5	
" "	"	3.328, 15°	
" "	"	3.2343, 16°	Brauns. Bei. 11, 698.
" "	"	3.289, 33°	
" "	"	3.189, 74°	
" "	"	3.28528, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	3.26555, 25°	
Ethylene iodide	$C_2 H_4 I_2$	2.07	E. Kopp. J. P. C. 33, 183.
Ethylidene iodide	"	2.84, 0°	Gustavson. B. S. C. 22, 13.
Propylene iodide	$C_3 H_6 I_2$	2.490, 18°.5	Berthelot and De Luca. J. 7, 453.
" "	"	2.5631, 19°	Freund. J. C. S. 42, 156.
Trimethylene iodide	"	2.59617, 4°	Perkin. Ber. 18, 221.
" "	"	2.57612, 15°	
" "	"	2.56144, 25°	
Allylene dihydriodate	"	2.15, 0°	Oppenheim. J. 18, 493.
" "	"	2.4458, 0°	Semenoff. J. 18, 494.
β Butylene iodide	$C_4 H_8 I_2$	2.291, 0°	Wurtz. C. R. 97, 478.
Diallyl dihydriodate	$C_6 H_{12} I_2$	2.024, 0°	Wurtz. J. 17, 511.
Iodoform	$C H I_3$	2.00	Weltzien's Zusammenstellung.
"	"	4.09	Brügelmann. Ber. 17, 2359.
Acetylene iodide	$C_2 H_2 I_2$	3.303, 21°, s.	Sabanejeff. A. C. P. 178, 119–121.
" "	"	2.942, 21°, l.	
Iodethylene (vinyl iodide)	$C_2 H_3 I$	1.98	Regnault.
"	"	2.09, 0°	Gustavson. Ber. 7, 731.
Allyl iodide	$C_3 H_5 I$	1.789, 16°	Berthelot and De Luca.
" "	"	1.746, 0°	Woieikoff. J. 16, 495.
" "	"	1.848, 12°	Linnemann. A. C. P., 3d Supp., 267.
" "	"	1.839, 14°	Linnemann. A. C. P., 3d Supp., 264.
" "	"	1.8696, 0°	Zander. A. C. P. 214, 181.
" "	"	1.6601, 102°.6	
" "	"	1.846, 15°	Romburgh. Ber. 16, 392.
" "	"	1.82403, 15°	Perkin. J. P. C. (2), 31, 481.
" "	"	1.80776, 25°	
Allylene hydriodate	"	1.8346, 0°	Semenoff. J. 18, 494.
" "	"	1.8028, 16°	
Allylene iodide	$C_3 H_4 I_2$	2.62, 0°	Oppenheim. J. 18, 493.

Name.	Formula.	Sp. Gravity.	Authority.
Iodallylene	$C_3 H_3 I$	1.7	Liebermann. J. 18, 495.
Propargyl iodide	"	2.0177, 0°	Henry. Ber. 17, 1182.
Diallyl hydriodate	$C_6 H_{11} I$	1.497, 0°	Wurtz. J. 17, 514.
Iodhexylene	"	1.92, 10°	Destrem. Ann. (5), 27, 50.
Iodobenzene	$C_6 H_5 I$	1.69	Schutzenberger. J. 14, 348.
"	"	1.833	Kekulé. J. 19, 554.
"	"	1.64, 15°	Ladenburg. A. C. P. 159, 251.
"	"	1.8403, 11°	Schiff. Ber. 19, 560.
"	"	1.7732, 56°.8	
"	"	1.7374, 79°.2	
"	"	1.6486, 135°.5	
"	"	1.8578, 0°	Schiff. Bei. 9, 559.
"	"	1.5612, 187°.5	
Orthoiodtoluene	$C_7 H_7 I$	1.698, 20°	Beilstein and Kuhlberg. A.C.P. 158, 349.
Metaiodtoluene	"	1.697, 20°	Beilstein and Kuhlberg. Z. C. 13, 103.
Benzyl iodide	"	1.7335, 25°	Lieben. J. 22, 425.

LIX. COMPOUNDS CONTAINING C, H, I, O, OR C, H, I, N.

Name.	Formula.	Sp. Gravity.	Authority.
Tetraiodmethyl oxide	$C_2 H_2 I_4 O$	3.345	Brüning. J. 10, 432.
Moniodethyl oxide	$C_4 H_9 I O$	1.6924, 0°	Henry. C. R. 100, 1007.
Acetyl iodide	$C_2 H_3 O. I$	1.98, 17°	Guthrie. J. 10, 344.
Propyl iodacetate	$C_5 H_9 I O_2$	1.6794, 7°	Henry. C. R. 100, 114.
Methyl β iodpropionate	$C_4 H_7 I O_2$	1.8408, 7°	" "
Ethyl β iodpropionate	$C_5 H_9 I O_2$	1.707, 8°	" "
" "	"	1.6789, 15°	Otto. Ber. 21, 98.
Methyl γ iodbutyrate	"	1.666, 5°	Henry. C. R. 102, 368.
Iodaldehyde	$C_2 H_3 I O$	2.14, 20°	Chautard. C. R. 102, 118.
Iodacetone	$C_3 H_5 I O$	2.17, 15°	Clermont and Chautard. C.R. 100, 745.
Iodhydrodiglycide	$C_6 H_{11} I O_3$	1.783	Berthelot and De Luca.
Diiodhydrin	$C_3 H_6 I_2 O$	2.4	Nahmacher. Ber. 5, 356.
Epiiodhydrin	$C_3 H_5 I O$	2.03, 13°	Reboul. J. 13, 459.
Santonyl iodide		1.3282	Carnelutti and Nasini. Ber. 13, 2210.
Iodchinolin	$C_9 H_6 I N$	1.9323	La Coste. Ber. 18, 780.
"	"	1.9345	

LX. COMPOUNDS CONTAINING TWO OR MORE HALOGENS.

Name.	Formula.	Sp. Gravity.	Authority.
Chlorobrommethane	$C H_2 Cl Br$	1.9907, 19°	Henry. C. R. 101, 599.
Bromochloroform	$C H Cl_2 Br$	1.9254, 15°	Jacobsen and Neumeister. Ber. 15, 599.
"	"	1.983	Arnhold. A. C. P. 240, 192.
Chlorobromoform	$C H Cl Br_2$	2.4450, 15°	Jacobsen and Neumeister. Ber. 15, 599.
"	"	2.447, 20°	Dyson. J. C. S. 43, 36.
Ethylene chlorobromide	$C H_2 Cl. C H_2 Br$	1.700, 18°	Henry. A. C. P. 156, 15.
" "	"	1.705, 11°	Montgolfier and Giraud. C. R. 88, 654.
Ethylidene chlorobromide	$C H_3. C H Cl Br$	1.61„14°	Reboul. A. C. P. 155, 215.
" "	"	1.666, 16°	Denzel. Ber. 11, 1739.
Chlorodibromethane	$C H_3. C Br_2 Cl$	2.184, 16°	" "
"	$C H_2 Br. C H Br Cl$	2.268, 16°	" "
Dichlorbromethane	$C H_3. C Br Cl_2$	1.752, 16°	Denzel. Ber. 11, 1740.
"	$C H_2 Cl. C H Br Cl$	2.113, 0°	Lescoeur. J. C. S. 34, 718.
"	"	1.86850, 15°	Perkin. J. P. C. (2), 32, 523.
"	"	1.85420, 25°	Perkin. J. P. C. (2), 32, 523.
"	$C H Cl_2. C H_2 Br$	1.238, 15°. ?	Delacre. Bull. Acad. Belg. (3), 13, 251.
Brommethylchloroform	$C Cl_3. C H_2 Br$	1.8839, 0°	Henry. C. R. 98, 371.
Chlortribromethane	$C H_2 Br. C Br_2 Cl$	2.602, 16°	Denzel. Ber. 11, 1739.
Dichlordibromethane	$C H_2 Br. C Br Cl_2$	2.270, 16°	Denzel. Ber. 11, 1740.
"	$C H Cl_2. C H Br_2$	2.391, 19°	Sabanejeff. Ber. 16, 1221.
Trichlordibromethane	$C_2 H Cl_3 Br_2$	2.317, 0°	Paterno. J. P. C. (2), 5, 98.
"	"	2.295, 19°.5	Paterno. J. P. C. (2), 5, 98.
"	"	2.129, 100°	Paterno. J. P. C. (2), 5, 98.
Chlortetrabromethane	$C H Br_2. C Br_2 Cl$	3.366, 16°	Denzel. Ber. 11, 1740.
Chlordibromethylene	$C_2 H Br_2 Cl$	2.275, 16°	Denzel. Ber. 11, 1741.
Dichlorbromethylene	$C_2 H Cl_2 Br$	1.906, 16°	" "
Acetylene chlorobromide	$C_2 H_2 Cl Br$	1.8157, 0°	Plimpton. J. C. S. 41, 391.
" "	"	1.7787, 0°	Sabanejeff. Ber. 16, 1221.
" "	"	1.7467, 19°	Sabanejeff. Ber. 16, 1221.
Propylene chlorobromide	$C_3 H_6 Cl Br$	1.62, 16°	Reboul. A. C. P. 155, 216.
" "	$C H_3. C H Cl. C H_2 Br$	1.585, 0°	Friedel and Silva. B. S. C. (2), 17, 532.
" "	"	1.475, 18°	Friedel and Silva. B. S. C. (2), 17, 532.

Name.	Formula.	Sp. Gravity.	Authority.
Propylene chlorobromide	$CH_3.CH_2.CHClBr$	1.60, 20°	Reboul. Ber. 7, 1087.
" "	$CH_3.CHBr.CH_2Cl$	1.474, 21°	" "
" "	$CH_2Br.CH_2.CH_2Cl$	1.63, 8°	" "
Dibromchlorpropylene	$CH_3.CClBr.CH_2Br$	2.064, 0°	Friedel. J. 12, 337.
Chlorodibromhydrin	$C_3H_5ClBr_2$	2.085, 9°	Reboul. J. 13, 461.
"	"	2.088	Oppenheim. J. 21, 341.
"	"	2.004, 15°	Darnstaedter. J. 22, 375.
Chlorobromhydroglycide	C_3H_4ClBr	1.69, 14°	Reboul. J. 13, 461.
Derivative of chlorobromhydroglycide.	$C_3H_4ClBr_2$	2.39, 14°	Reboul. J. 13, 462.
Derivative of epidichlorhydrin.	$C_3H_4Cl_2Br_2$	2.10, 13°	" "
Bromallyl chloride	C_3H_4BrCl	1.63, 11°	Henry. B. S. C. 18, 232.
Chloracetyl bromide	$C_2H_2ClO.Br$	1.913, 9°	Wilde. J. 17, 320.
Bromacetyl chloride	$C_2H_2BrO.Cl$	1.908, 9°	Wilde. J. 17, 319.
Trichloracetyl bromide	$C_2Cl_3O.Br$	1.900, 15°	Hofferichter. J. P. C. (2), 20, 195.
Hexchlortetrabromethyl oxide.	$C_4Cl_6Br_4O$	2.5, 18°	Malaguti. Ann. (3), 16, 25.
Chlorobromethyl acetate	$C_4H_6ClBrO_2$	1.6499, 11°.4	Henry. C. R. 97, 1308.
Dichlordibromethyl acetacetate.	$C_6H_6Cl_2Br_2O_3$	1.956, 19°	Conrad and Guthzeit. Ber. 16, 1551.
Tribromchloracetone	$C_3H_2ClBr_3O$	2.270	Cloëz. Ann. (6), 9, 145.
Bromochloral	C_2HCl_2BrO	1.9176, 15°	Jacobsen and Neumeister. Ber. 15, 599.
Chlorobromal	C_2HBr_2ClO	2.2793, 15°	" "
Chlorobromhydrin	C_3H_6ClBrO	1.740, 12°	Reboul. J. 13, 458.
"	"	1.7641, 9°	Henry. Z. C. 13, 604.
Phycite bromodichlorhydrin.	$C_3H_5Cl_2BrO$	2.1719, 0°	Wolff. A. C. P. 150, 82.
"	"	2.1426, 17°.5	
Chlorodibromnitromethane.	$CClBr_2NO_2$	2.421, 15°	Tscherniak. Ber. 8, 610.
Chlorobromnitrin	$C_3H_5ClBrNO_3$	1.7904, 9°	Henry. Ber. 4, 701.
Chloriodomethane	CH_2ClI	2.49, 20°	Sakurai. J. C. S. 41, 362.
"	"	2.447, 11°	Sakurai. J. C. S. 47, 198.
"	"	2.444, 14°.5	
Chloriodoform	$CHCl_2I$	1.96	Bouchardat. A. C. P. 22, 230.
"	"	2.454, 0°	Borodine. J. 15, 391.
"	"	2.403, 21°.5	
Ethylene chloriodide	C_2H_4ClI	2.151, 0°	Simpson. J. 16, 485.
" "	"	2.39, 20°	Maumené. J. 22, 345.
" "	"	2.16439, 0°	Thorpe. J. C. S. 37, 371.
" "	"	1.87915, 140°.1	

Name.	Formula.	Sp. Gravity.	Authority.
Chloriodethylene	$C_2 H_2 Cl I$	2.1431, 0°	Henry. C. R. 98, 742.
Acetylene chloriodide	"	2.2298	Plimpton. J. C. S. 41, 391.
" "	"	2.154, 0°	Sabanejeff. Ber. 16, 1221.
" "	"	2.1175, 19°	
Propylene chloriodide	$C_3 H_6 Cl I$	1.932, 0°	Simpson. J. 16, 494.
" "	"	1.824	Oppenheim. J. 20, 571.
β Chlorallyl iodide	$C_3 H_4 Cl I$	1.977, 15°	Romburgh. Ber. 16, 393.
α Chlorallyl iodide	"	1.880, 15°	
" "	"	1.918, 15°	
Dichloriodhydrin	$C_3 H_5 Cl_2 I$	2.0476, 9°	Henry. Ber. 4, 701.
Orthochloriodobenzene	$C_6 H_4 Cl I$	1.928, 24°.5	Beilstein and Kurbatow. A. C. P. 176, 48.
Chloriodotoluene	$C_7 H_6 Cl I$	1.702, 19°	Beilstein and Kuhlberg. A. C. P. 156, 82.
"	"	1.716, 17°	Wroblevsky. Z. C. 13, 164.
"	"	1.770, 19°.5	" "
Chloriodethyl acetate	$C_4 H_6 Cl I O_2$	1.9540, 18°	Henry. C. R. 97, 1308.
Iodochlorhydrin	$C_3 H_6 Cl I O_2$	2.06, 10°	Reboul. J. 13, 458.
Bromiodomethane	$C H_2 Br I$	2.9262, 16°.8	Henry. C. R. 101, 599.
Ethylene bromiodide	$C H_2 Br. C H_2 I$	2.7, 1°	Reboul. A. C. P. 155, 214.
" "	"	2.516, 29°	Simpson. C. N. 29, 53.
" "	"	2.514, 30°	Friedel. C. R. 79, 164.
" "	"	2.705, 18°, s.	Lagermarck. Ber. 7, 907.
Ethylidene bromiodide	$C H_3. C H Br I$	2.5, 1°	Reboul. A. C. P. 155, 218.
" "	"	2.452, 16°	Lagermarck. Ber. 7, 907.
Dibromiodethane	$C_2 H_3 Br_2 I$	2.86, 29°	Simpson. C. N. 29, 53.
Bromiodethylene	$C_2 H_2 Br I$	2.5651, 0°	Henry. C. R. 98, 742.
Acetylene bromiodide	"	2.750, 0°, s.	Plimpton. J. C. S. 41, 391.
" "	"	2.6272, 17°.5	
Propylene bromiodide	$C_3 H_6 Br I$	2.2, 11°	Reboul. A. C. P. 155, 214.
Paraiodorthobromtoluene	$C_7 H_6 Br I$	2.044, 20°.7	Wroblevsky. Z. C. 13, 165.
Metaiodorthobromtoluene	"	2.139, 18°	Wroblevsky. Z. C. 14, 210.
Chlorobromiodethane	$C_2 H_3 Cl Br I$	2.53, 0°	Henry. C. R. 98, 680.
Chlorobromiodhydrin	$C_3 H_5 Cl Br I$	2.325, 9°	Henry. Ber. 4, 701.

LXI. ORGANIC COMPOUNDS OF FLUORINE.*

Name.	Formula.	Sp. Gravity.	Authority.
Fluobenzene	$C_6 H_5 F$	1.024, 20°	Wallach. A. C. P. 235, 255.
"	"	1.0236, 20°	Wallach and Heusler. A. C. P. 243, 221.
Paradifluobenzene	$C_6 H_4 F_2$	1.11	Wallach and Heusler. A. C. P. 243, 219.
Parafluotoluene	$C_7 H_7 F$	.992, 25°	Wallach. A. C. P. 235, 255.
Parafluochlorobenzene	$C_6 H_4 Cl F$	1.226, 15°	Wallach and Heusler. A. C. P. 243, 219.
Parafluobrombenzene	$C_6 H_4 Br F$	1.593, 15°	" "
Parafluoanilin	$C_6 H_6 N F$	1.153, 25°	Wallach. A. C. P. 235, 255.
Parafluonitrobenzene	$C_6 H_4 N O_2 F$	1.326, 1.	" "

LXII. ORGANIC COMPOUNDS OF SULPHUR.

1st. Compounds Containing C, H, and S.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl sulphide	$(C H_3)_2 S$	.845, 21°	Regnault. Ann. (2), 71, 391.
Ethyl sulphide	$(C_2 H_5)_2 S$	.825, 20°	Regnault. Ann. (2), 71, 388.
" "	"	.83672, 0°	Pierre. C. R. 27, 213.
" "	"	.83676, 20	Nasini. Ber. 15, 2882.
Propyl sulphide	$(C_3 H_7)_2 S$	.814, 17°	Cahours. B. S. C. 19, 301.
Ethyl amyl sulphide	$(C_2 H_5) (C_5 H_{11}) S$	.852, 0°	Saytzeff. J. 19, 529.
Butyl sulphide	$(C_4 H_9)_2 S$	.849, 0°	Saytzeff. J. 19, 528.
" "	"	.8386, 16°	Grabowsky and Saytzeff. A. C. P. 175, 351.
" "	"	.8317, 23°	Reymann. J. C. S. (2), 13, 141.
Isobutyl sulphide	"	.8363, 10°	Beckman. J. P. C. (2), 17, 446.
Isoamyl sulphide	$(C_5 H_{11})_2 S$	.84314, 20°	Nasini. Ber. 15, 2883.
Octyl sulphide	$(C_8 H_{17})_2 S$	.8419, 17°	Möslinger. Ber. 9, 1004.

* See also under organic compounds of boron.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl disulphide	$C_2H_6S_2$	1.046, 18°	Cahours. Ann. (3), 18, 258.
" "	"	1.06358, 0°	Pierre. C. R. 27, 213.
Ethyl disulphide	$C_4H_{10}S_2$	About 1.00	Morin. P. A. 48, 484.
" "	"	.99267, 20°	Nasini. Ber. 15, 2882.
Amyl disulphide	$C_{10}H_{22}S_2$	.918, 18°	O. Henry. J. 1, 700.
Methyl trisulphide	$C_3H_9S_3$	1.2162, 0°	Klason. Ber. 20, 3415.
" "	"	1.2059, 10°	
" "	"	1.199, 17°	
Ethyl mercaptan	$C_2H_5.SH$	.842, 15°	Zeise. P. A. 31, 389.
" "	"	.835, 21°	Liebig. A. C. P. 11, 15.
" "	"	.8456, 5°—10°	Regnault. P. A. 53, 60.
" "	"	.8406, 10°—15°	
" "	"	.8356, 15°—20°	
" "	"	.83907, 20°	Nasini. Ber. 15, 2882.
Butyl mercaptan	$C_4H_9.SH$	.858, 0°	Grabowsky and Saytzeff. A. C. P. 175, 351.
" "	"	.843, 16°	
Isobutyl mercaptan	"	.848, 11°.5	Humann. J. 8, 613.
" "	"	.8299, 17°	Reymann. J. C. S. (2), 13, 141.
" "	"	.83573, 20°	Nasini. Ber. 15, 2882.
Amyl mercaptan	$C_5H_{11}.SH$	.835, 21°	Krutzsch. J. P. C. 31, 2.
" "	"	.8548, 0°	Kopp. A. C. P. 95, 307.
" "	"	.8405, 16°.9	
" "	"	.83475, 20°	Nasini. Ber. 15, 2883.
Hexyl mercaptan	$C_6H_{13}.SH$	.8356, 0°	Wanklyn and Erlenmeyer. J. 17, 509.
Carbon tetramercaptide	$C(SC_2H_5)_4$	1.01	Claesson. J. 1877, 520.
Ethylene mercaptan	$C_2H_4(SH)_2$	1.123, 23°.5	Werner. J. 15, 424.
Methylene dithioethylate	$CH_2.(SC_2H_5)_2$	.987, 20°	Claesson. J. P. C. 123, 176.
Ethylene dithioethylate	$C_2H_4.(SC_2H_5)_2$	.98705, 15°.5	V. Meyer. Ber. 19, 3266.
Ethylene thiovinylethylate.	$C_2H_4.SC_2H_5.SC_2H_3$	1.01921, 15°.5	" "
"	"	1.0167, 19°–20°	
Derivative of dithioglycol	$C_6H_{10}S_2$	1.087, 22°	Mansfeld. Ber. 19, 2662.
Amylene sulphide	$C_5H_{10}S$	.907, 13°	Guthrie. J. 14, 665.
Vinyl sulphide	$(C_2H_3)_2S$	1.015, 13°	Semmler. A. C. P. 241, 93.
Allyl sulphide	$(C_3H_5)_2S$	.8544, 11°	Gladstone. Bei. 9, 249.
" "	"	.88765, 4°	Nasini and Scala. Bei. 10, 696.
Allyl trisulphide	$C_6H_{10}S_3$	1.012, 15°	Löwig. J. 13, 399.
Fusyl sulphide	C_5H_9S	.880, 18°	Guthrie. J. 12, 484.

Name.	Formula.	Sp. Gravity.	Authority.
Trisulphhydrin	$C_3 H_8 S_3$	1.391, 14°.4	Carius. J. 15, 455.
Methyl trisulphocarbonate	$C_3 H_6 S_3$	1.159, 18°	Cahours. Ann. (3), 19, 162.
Ethyl trisulphocarbonate	$C_5 H_{10} S_3$	1.152	Salomon. J. P. C. (2), 6, 433.
Amyl trisulphocarbonate	$C_{11} H_{22} S_3$	.877	Hüsemann. J. 15, 410.
Ethylene trisulphocarbonate.	$C_3 H_4 S_3$	1.4768	Hüsemann. A. C. P. 123, 87
Propylene trisulphocarbonate.	$C_4 H_6 S_3$	1.31, 20°	Hüsemann. J. 15, 434.
Butylene trisulphocarbonate.	$C_5 H_8 S_3$	1.26, 20°	" "
Amylene trisulphocarbonate.	$C_6 H_{10} S_3$	1.073	" "
Allyl trisulphocarbonate	$C_7 H_{10} S_3$	.943	Hüsemann. J. 15, 410.
Phenyl sulphide	$(C_6 H_5)_2 S$	1.119	Stenhouse. J. 18, 532.
Phenyl tetrasulphide	$(C_6 H_5)_2 S_4$	1.297, 14°.5	Otto. J. P. C. (2), 37, 209.
Phenyl ethyl sulphide	$(C_6 H_5) (C_2 H_5) S$	1.0315, 10°	Beckmann. J. C. S. 36, 37.
Ethyl paratolyl sulphide	$(C_7 H_7) (C_2 H_5) S$	1.0016, 17°.5	Gäbler. Ber. 13, 1277.
Phenyl mercaptan	$C_6 H_5 . S H$	1.078, 14°	Vogt. J. 14, 630.
Benzyl mercaptan	$C_7 H_7 . S H$	1.058, 20°	Märcker. J. 18, 548.
Xylyl mercaptan	$C_8 H_9 . S H$	1.036, 18°	Schepper. J. 18, 558.
Mesitylene mercaptan	$C_9 H_{11} . S H$	1.0192	Holtmeyer. J. 20, 708.
Cymyl mercaptan	$C_{10} H_{13} . S H$	.9975, 17°.5	Flesch. C. C. 4, 519.
" "	"	.989	Fittica. A. C. P. 172, 326.
" "	"	.995	Bechler. Leipzig Inaug. Diss. 1873.
Methylcymyl mercaptan	$C_{11} H_{15} . S H$	.986	" "
Naphtyl mercaptan	$C_{10} H_7 . S H$	1.146, 23°	Schertel. J. 17, 533.
Thiophene	$C_4 H_4 S$	1.062, 23°	V. Meyer. Ber. 16, 1471.
"	"	1.08844, 0°	Schiff. Ber. 18, 1605.
"	"	1.0769, 10°	"
"	"	1.0651, 20°	"
"	"	1.0533, 30°	"
"	"	1.0413, 40°	"
"	"	1.0291, 50°	"
"	"	1.0169, 60°	"
"	"	1.0045, 70°	"
"	"	.9920, 80°	"
"	"	.98741, 84°	"
"	"	1.05928, 4°	Nasini and Scala. Bei. 10, 696.

Name.	Formula.	Sp. Gravity.	Authority.
Thiophene	$C_4 H_4 S$	1.07387, 11°.8	Knops. V. H. V. 1887, 17.
"	"	1.06835, 16°.5	
"	"	1.06466, 19°.7	
"	"	1.06432, 20°	
"	"	1.06045, 23°.4	
"	"	1.05662, 26°.8	
"	"	1.05332, 29°.2	
"	"	1.0534, 32°	
Thiotolene	$C_5 H_6 S$	1.0194, 18°	Meyer and Kreis. Ber. 17, 788.
Orthothioxene	$C_6 H_8 S$	.9777, 21°	Demuth. Ber. 19, 1858.
"	"	.9938, 21°	Grünewald. Ber. 20, 2586.
Metathioxene	"	.9755, 17°.5	Messinger. Ber. 18, 1637.
"	"	.9956, 20°	Zelinsky. Ber. 20, 2017.
Ethylthiophene	"	.990, 24°	Meyer and Kreis. Ber. 17, 1558.
Normal propylthiophene	$C_7 H_{10} S$	.974, 16°	" "
Isopropylthiophene	"	.9695, 16°	Schleicher. Ber. 19, 673.
Normal butylthiophene	$C_8 H_{12} S$	.957, 19°	Meyer and Kreis. Ber. 17, 1558.
Diethylthiophene	"	.962, 14°	Muhlert. Ber. 19, 634.
Octylthiophene	$C_{12} H_{20} S$	.8118, 20°.5	Schweinitz. Ber. 19, 644.
β Methylpenthiophene	$C_6 H_8 S$	.9938, 19°	Krekeler. Ber. 19, 3271.

2d. Compounds Containing C, H, S, and O.

Name.	Formula.	Sp. Gravity.	Authority.
Methyl sulphite	$(C H_3)_2 S O_3$	1.0456, 16°.2	Carius. J. 12, 86.
Methyl ethyl sulphite	$(C H_3) (C_2 H_5) S O_3$	1.0675, 18°	Carius. A. C. P. 111, 103.
Ethyl sulphite	$(C_2 H_5)_2 S O_3$	1.085, 16°	Ebelmen and Bouquet. Ann. (3), 17, 67.
" "	"	1.10634, 0°	Pierre. C. R. 27, 213.
" "	"	1.1063, 0°	Carius. J. P. C. (2), 2, 285.
" "	"	1.0926, 12°.7	
" "	"	1.0982, 11°	Nasini. Bei. 9, 324.
Methyl sulphate	$(C H_3)_2 S O_4$	1.324, 22°	Dumas and Peligot. Ann. (2), 58, 33.
" "	"	1.335, 13°	Bödeker. B. D. Z.
" "	"	1.327, 18°	Claesson. J. P. C. (2), 19, 244.
" "	"	1.33344, 15°	Perkin. J. C. S. 49, 777.
" "	"	1.32757, 20°	
" "	"	1.32386, 25°	

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl sulphate	$(C_2H_5)_2SO_4$	1.120	Wetherill. J. 1, 692.
" "	"	1.1887, 19°	Claesson. J. P. C. (2), 19, 258.
" "	"	1.167	Stempnevsky. Ber. 15, 947.
Ethyl sulphurous acid	$C_2H_5.H.SO_3$	1.3	Kopp. A. C. P. 35, 348.
Ethyl sulphuric acid	$C_2H_5.H.SO_4$	1.319	Vogel. Gmelin's Handbuch.
" " "	"	1.315 } 16°	Marchand. Gmelin's Handbuch.
		1.317 } 16°	
" " "	"	1.215	Duflos. Gmelin's Handbuch.
Ethyl ethylsulphonate	$C_4H_{10}SO_3$	1.1712, 0°	Carius. J. P. C. (2), 2, 269.
" "	"	1.1508, 20°.4	
" "	"	1.14517, 22°	Nasini. Ber. 15, 2884.
Isoamyl ethyl sulphone	$C_7H_{16}SO_2$	1.0315, 18°	Beckmann. J.C.S. 36, 88.
Diisobutyl sulphone	$C_8H_{18}SO_2$	1.0056, 18°	" "
Methyl methylxanthate	$CH_3O.CS.CH_3S$	1.148, 15°	Cahours. Ann. (3), 19, 160.
" "	"	1.176, 18°	Salomon. J. P. C. (2), 8, 114.
Ethyl methylxanthate	$CH_3O.CS.C_2H_5S$	1.12, 18°	" "
" "	"	1.128, 11°	Chancel. J. 8, 470.
Methyl ethylxanthate	$C_2H_5O.CS.CH_3S$	1.129, 18°	Salomon. J. P. C. (2), 8, 114.
" "	"	1.11892, 4°	Nasini and Scala. Bei. 10, 696.
Ethyl ethylxanthate	$C_2H_5O.CS.C_2H_5S$	1.0708, 18°	Zeise. A. C. P. 55, 310.
" "	"	1.07	Debus. A. C. P. 75, 125.
" "	"	1.085, 19°	Salomon. J. P. C. (2), 6, 433.
Methyl propylxanthate	$C_3H_7O.CS.CH_3S$	1.08409, 4°	Nasini and Scala. Bei. 10, 696.
Ethyl propylxanthate	$C_3H_7O.CS.C_2H_5S$	1.05054, 4°	" "
Ethyl butylxanthate	$C_4H_9O.CS.C_2H_5S$	1.008, 17°	Mylius. B. S. C. 19, 221.
Butyl butylxanthate	$C_4H_9O.CS.C_4H_9S$	1.009, 12°	" "
Ethyl dithioxycarbonate	$C_2H_5S.CO.C_2H_5S$	1.084, 20°	Schmidt and Glutz. J. 21, 575.
" "	"	1.085, 19°	Salomon. J. P. C. (2), 6, 433.
Ethyl thioxycarbonate	$C_2H_5O.CO.C_2H_5S$	1.0285, 18°	" "
Ethyl dioxythiocarbonate	$C_2H_5O.CS.C_2H_5O$	1.032, 1°	Debus. J. 3, 465.
" "	"	1.031, 19°	Salomon. J. P. C. (2), 6, 433.
Ethyl butyl thioxycarbonate.	$C_2H_5S.CO.C_4H_9O$	.9939, 10°	Mylius. Ber. 6, 312.
" " "	$C_2H_5O.CO.C_4H_9S$	.9938, 10°	" "
Ethyl dioxysulphocarbonate. ?	$C_6H_{10}S_4O_2$	1.26048, 4°	Nasini and Scala. Bei. 10, 696.
Propyl dioxysulphocarbonate. ?	$C_8H_{14}S_4O_2$	1.19661, 4°	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Xanthurin	$C_4 H_8 S O_2$	1.012	Couërbe. A. C. P. 40, 297.
Thiacetic acid	$C_2 H_4 S O$	1.074, 10°	Ulrich. J. 12, 355.
Ethyl ethylthioglycollate	$C_6 H_{12} S O_2$	1.0469, 4°	Claesson. B. S. C. 28, 445.
Ethyl amylthioglycollate	$C_9 H_{18} S O_2$	.9797, 4°	Claesson. B. S. C. 28, 446.
Ethyl phenylthioglycollate.	$C_{10} H_{12} S O_2$	1.186, 4°	Claesson. B. S. C. 23, 443.
" "	"	1.1269, 15°	
Disulphamylene oxide	$C_{10} H_{20} S_2 O$	1.054, 18°	Guthrie. J. 12, 483.
Disulphamylene hydrate	$C_{10} H_{22} S_2 O_2$	1.049, 8°	" "
Aldehyde with sulphaldehyde.*	$C_2 H_4 O + C_2 H_4 S$	1.134	Weidenbusch. J. 1, 550.
Diheptylene sulphoxide	$(C_7 H_{14})_2 S O$	.875, 23°	Schiff. J. 21, 724.
Monosulphhydrin	$C_3 H_8 S O_2$	1.295, 14°.4	Carius. J. 15, 453.
Disulphhydrin	$C_3 H_8 S_2 O$	1.342, 14°.4	Carius. J. 15, 454.
Ethyl thioxalate	$C_6 H_{10} S O_3$	1.1446, 0°	Morley and Saint. J. C. S. 43, 400.
Oxysulphobenzid	$C_{12} H_{10} S O_4$	1.3663, 15°	Annaheim. Ber. 9, 1149.
Oxyphenyl mercaptan	$C_6 H_6 S O$	1.2378, 0°	Haitinger. M. C. 4, 171.
" "	"	1.1889, 100°	
Thiophene aldehyde	$C_5 H_4 S O$	1.215, 21°	Biedermann. Ber. 19, 1853.
Acetothienone	$C_6 H_6 S O$	1.167, 24°	Peter. Ber. 17, 2644.
Acetoethylthienone	$C_8 H_{10} S O$	1.0959, 20°	Schleicher. Ber. 19, 660.
Acetylthioxene	"	1.0910, 17°	Messinger. Ber. 18, 2302.

3d. Sulphur Compounds Containing Nitrogen.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Methyl thiocyanate	$N C. S C H_3$	1.115, 16°	Cahours. Ann. (3), 18, 261.
" "	"	1.08794, 0°	Pierre. C. R. 27, 213.
" "	"	1.06935, 4°	Nasini and Scala. Bei. 10, 696.
Ethyl thiocyanate	$N C. S C_2 H_5$	1.020, 16°	Cahours. Ann. (3), 18, 265.
" "	"	a1.00	Löwig. P. A. 67, 101.
" "	"	1.033, 0°	Buff. Ber. 1, 206.
" "	"	1.01261, 19°	
" "	"	1.00238, 22°	
" "	"	.870135, 146°	
" "	"	.869367, 146°	
" "	"	1.00715, 4°	Nasini and Scala. Bei. 10, 696.

* Pinner's formula. Weidenbusch calls it "sulphhydrate of acetyl mercaptan," and writes the formula $C_{12} H_{26} S_7$.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Isopropyl thiocyanate	N C. S C_3 H_7	.989, 0°	Gerlich. Ber. 8, 651.
" "	"	.974, 15°	
" "	"	.963, 20°	L. Henry. J. 22, 361.
Amyl thiocyanate	N C. S C_5 H_{11}	.905, 20°	O. Henry. J. 1, 700.
Hexyl thiocyanate	N C. S C_6 H_{13}	.922, 12°	Pelouze and Cahours. J. 16, 526.
Allyl thiocyanate	N C. S C_3 H_5	1.071, 0°	Gerlich. Ber. 8, 653.
" "	"	1.056, 15°	
Methyl thiocarbimide	C S. N C H_3	1.06912, 4°	Nasini and Scala. Bei. 10, 696.
Ethyl thiocarbimide	C S. N C_2 H_5	1.01925, 0°	Buff. Ber. 1, 206.
" "	"	.997525, 21°.4	
" "	"	.997235, 22°	
" "	"	.87909 } 133°.2	
" "	"	.873513	
" "	"	1.0030, 18°	Gladstone. Bei. 9, 249.
" "	"	.99525, 4°	Nasini and Scala. Bei. 10, 696.
Tertiary butyl thiocarbimide.	C S. N C_4 H_9	.9187, 15°	Rudneff. Ber. 12, 1023.
" "	"	.9003, 34°	
Amyl thiocarbimide	C S. N C_5 H_{11}	.957538, 0°	Buff. Ber. 1, 206.
" "	"	.94189, 17°	
" "	"	.78749, 182°	
Hexyl thiocarbimide	C S. N C_6 H_{13}	.9253	Uppenkamp. Ber. 8, 56.
Allyl thiocarbimide	C S. N C_3 H_5	1.015, 20°	Dumas and Pelouze. Ann. (2), 53, 182.
" "	"	1.009 } 15°	Will. A. C. P. 52, 4.
" "	"	1.010	
" "	"	1.0282, 0°	Kopp. A. C. P. 98, 367.
" "	"	1.0173, 10°.1	
" "	"	.8739 } 150°.1	Schiff. Ber. 14, 2767.
" "	"	.8741	
" "	"	.8740, 151°.3	Schiff. Ber. 19, 560.
" "	"	1.00572, 4°	Nasini and Scala. Bei. 10, 696.
Phenyl thiocarbimide	C S. N C_6 H_5	1.135, 15°.5	Hofmann. J. 11, 349.
" "	"	1.155, 17°.5	Billeter. C. C. (3), 6, 101.
" "	"	.9398, 219°.8	Schiff. Bei. 9, 559.
" "	"	1.12891, 4°	Nasini and Scala. Bei. 10, 696.
" "	"	1.35	Madan. C. N. 56, 257.
Sulpho-urea	C H_4 N_2 S	1.406, 4°	Schröder. Ber. 12, 561.
"	"	1.450	Schröder. Ber. 13, 1070.
Thialdin	C_6 H_{13} N S_2	1.191, 18°	Wöhler and Liebig. A. C. P. 61, 4.
Oenanthothialdin	C_{21} H_{43} N S_2	.896, 24°	Schiff. J. 21, 724.
Diamylene dithiocyanate	C_{10} H_{20} $(C\ N)_2$ S_2	1.07, 13°	Guthrie. J. 14, 665.
Diamylene tetrathiocyanate.	C_{10} H_{20} $(C\ N)_2$ S_4	1.16, 13°	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Sulphocarbanilide	$C_{13} H_{12} N_2 S$	1.811 } 4°	Schröder. Ber. 12, 1611.
"	"	1.330 } 4°	
Thiocyanacetone	$C_4 H_5 S N O$	1.209, 0°	Tcherniak and Hellon. Ber. 16, 350.
"	"	1.195, 20°	
Acetyl thiocyanate	$N C. S C_2 H_3 O$	1.151, 16°	Miquel. C. R. 81, 1209.
Benzoyl thiocyanate	$N C. S C_7 H_5 O$	1.197, 16°	Miquel. C. R. 81, 1210.
Ethyl thiocyanacetate	$C_5 H_7 N S O_2$	1.174	Heintz. J. 18, 347.
" "	"	1.174	Claesson. Ber. 10, 1349.
Cystic oxide	$C_3 H_7 N S O_2$	1.7143	Venables. Watts' Dict.

4th. Sulphur Compounds Containing Halogens.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetrachlor-methyl mercaptan.	$C S Cl_4$	1.712, 12°.8	Rathke. A. C. P. 167, 198.
" "	"	1.722, 0°	Klason. Ber. 20, 2378.
" "	"	1.7049, 11°	
" "	"	1.6953, 17°.5	
Dichlorethyl sulphide	$(C_2 H_3 Cl_2)_2 S$	1.547, 12°	Riche. J. 7, 556.
Tetrachlorethyl sulphide	$(C_2 H Cl_4)_2 S$	1.673, 24°	Regnault. Ann. (2), 71, 406.
Ethyl chlorperthiocarbonate.	$C_2 H_5 S_2 Cl_2$	1.1408, 16°	Klason. Ber. 20, 2385.
Ethylene thiodichloride	$C_2 H_4 S Cl_2$	1.408, 18°	Guthrie. J. 12, 482.
Ethylene dithiodichloride	$(C_2 H_4)_2 S_2 Cl_2$	1.346, 19°	Guthrie. J. 13, 435.
Chlorethylene dithiodichloride.	$(C_2 H_3 Cl)_2 S_2 Cl_2$	1.599, 11°	Guthrie. J. 13, 433.
Dichlorethylene thiodichloride.	$(C_2 H_2 Cl_2)_2 S Cl_2$	1.225 } 13°.5	Guthrie. J. 13, 434.
"	"	1.219 } 13°.5	
Amylene thiodichloride	$C_5 H_{10} S Cl_2$	1.138, 14°	Guthrie. J. 12, 481.
Amylene dithiodichloride	$(C_5 H_{10})_2 S_2 Cl_2$	1.149, 12°	Guthrie. J. 12, 480.
Trichloramylene thiodichloride.	$(C_5 H_7 Cl_3)_2 S Cl_2$	1.406, 16°	Guthrie. J. C. S. 13, 44.
Methylsulphonic chloride	$C H_3 Cl S O_2$	1.51	McGowan. J. P. C. (2), 30, 280.
Dichlormethylsulphonic chloride.	$C H Cl_3 S O_2$	1.71	McGowan. Leipzig In. Diss. 1884.
Ethylsulphonic chloride	$C_2 H_5 Cl S O_2$	1.357, 22°.5	Gerhardt and Chancel. J. 5, 435.
Phenylsulphonic chloride	$C_6 H_5 Cl S O_2$	1.378, 23°	Gerhardt and Chancel. J. 5, 434.
Trichlormethyl amyl sulphite.	$C Cl_3. C_5 H_{11}. S O_3$	1.104	Carius. A. C. P. 113, 36.
Ethyl chlorosulphonate	$C_2 H_5 O. S O_2. Cl$	1.379, 0°	Purgold. J. 21, 416.
" "	"	1.3556, 27°	
" "	"	1.324, 61°	

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl chlorosulphonate	$C_2 H_5 O. S O_2. Cl$	1.8866, 0°	Two preparations. Claesson. J. P. C. (2), 21, 877.
" "	"	1.8539, 27°	
" "	"	1.3874, 0°	
" "	"	1.3541, 27°	
Carbonyl thioethyl chloride.	$C_2 H_5 S. C O. Cl$	1.184, 16°	Salomon. J. P. C. (2), 7, 254.
Carbonyl thioamyl chloride.	$C_5 H_{11} S. C O. Cl$	1.078, 17°.5	Schöne. J. P. C. (2), 32, 241.
Chlorallyl thiocarbimide	$C S. N C_3 H_4 Cl$	1.27, 12°	L. Henry. Ber. 5, 186.
Ethylene chlorothiocyanate.	$C_2 H_4. Cl. S C N$	1.28, 15°	James. J. C. S. 43, 38.
Tetrachloroxysulphobenzid.	$C_{12} H_6 Cl_4 S O_4$	1.7774, 16°	Annaheim. Ber. 9, 1150.
Tetrabromoxysulphobenzid.	$C_{12} H_6 Br_4 S O_4$	2.3775, 17°	" "
Tetriodoxysulphobenzid	$C_{12} H_6 I_4 S O_4$	2.7966, 19°	" "
Monobromthiophene	$C_4 H_3 Br S$	1.652, 23°	V. Meyer. Ber. 16, 1470.
Dibromthiophene	$C_4 H_2 Br_2 S$	2.147, 23°	" "
Octyliodthiophene	$C_4 H_2 S. C_8 H_{17}. I$	1.2614, 20°	Schweinitz. Ber. 19, 644.

LXIII. ORGANIC COMPOUNDS OF BORON.

Name.	Formula.	Sp. Gravity.	Authority.
Boron triethyl	$B (C_2 H_5)_3$	.6961, 23°	Frankland and Duppa. J. 13, 386.
Trimethyl borate	$(C H_3)_3 B O_3$	.9551, 0°	Ebelmen and Bouquet. J. P. C. 38, 218.
" "	"	.940, 0°	Schiff. A. C. P., 5th Supp., 184.
" "	"	.915, 20°	
Triethyl borate	$(C_2 H_5)_3 B O_3$	.8849	Ebelmen and Bouquet. J. P. C. 38, 215.
" "	"	.871	Bowman. P. M. (3), 29, 548.
" "	"	.887, 0°	Schiff. A. C. P., 5th Supp., 161.
" "	"	.861, 26°.5	
Methyl diethyl borate	$C H_3 (C_2 H_5)_2 B O_3$	.904, 0°	Schiff. A. C. P., 5th Supp., 197.
" " "	"	.883, 20°	
Tripropyl borate	$(C_3 H_7)_3 B O_3$	.867, 16°	Cahours. C. C. 4, 482.
Triamyl borate	$(C_5 H_{11})_3 B O_3$	.870	Ebelmen and Bouquet. J. P. C., 38, 219.
" "	"	.872, 0°	Schiff. A. C. P., 5th Supp., 189 and 195.
" "	"	.852, 24°	
" "	"	.840 } 28°	
" "	"	.855 } 28°	
" "	"	.853, 29, another lot.	

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl diamyl borate	$C_2 H_5 (C_5 H_{11})_2 B O_3$	.876, 0°	Schiff. A. C. P., 5th Supp., 198.
" " "	"	.852, 28°	
Diethyl amyl borate	$(C_2 H_5)_2 C_5 H_{11} B O_3$	.858, 26°	" "
Amyl metaborate	$C_5 H_{11} B O_2$	.971, 0°	Schiff. A. C. P., 5th Supp., 189.
" "	"	.949, 20°	
Tetraphenyl borate	$(C_6 H_5)_4 B_2 O_5$	1.18	Schiff and Bechi. J. 19, 498.
" "	"	1.124, 0°	Schiff. A. C. P., 5th Supp., 208.
" "	"	1.106, 20°	
Ethylene fluoborate	$C_2 H_4 B F O_2$	1.0478, 28°	Landolph. Ber. 12, 1586.

LXIV. ORGANIC COMPOUNDS OF PHOSPHORUS.

Name.	Formula.	Sp. Gravity.	Authority.
Triethylphosphin	$P (C_2 H_5)_3$	.812, 15°.5	Hofmann and Cahours. J. 10, 372.
Monoctylphosphin	$P H_2 (C_8 H_{17})$	.8209, 17°	Möslinger. Ber. 9, 1007.
Phenylphosphin	$P H_2 (C_6 H_5)$	1.001, 15°	Köhler and Michaelis. Ber. 10, 809.
Diphenylphosphin	$P H (C_6 H_5)_2$	1.07, 16°	Dörken. Ber. 21, 1508.
Triphenylphosphin	$P (C_6 H_5)_3$	1.194	Michaelis and Soden. A. C. P. 229, 302.
"	"	1.186	Soden. Tübingen In. Diss. 1885.
Dimethylphenylphosphin	$P (C H_3)_2 C_6 H_5$	.9768, 11°	Michaelis. Ber. 8, 498.
Diphenylmethylphosphin	$P C H_3 (C_6 H_5)_2$	1.0784, 15°	Michaelis and Link. A. C P. 207, 209.
Diethylphenylphosphin	$P (C_2 H_5)_2 C_6 H_5$	.9571, 13°	Michaelis. Ber. 8, 494.
Ethyl phosphite	$(C_2 H_5)_3 P O_3$	1.075	Williamson. J. 7, 563.
Methyl hypophosphate	$(C H_3)_4 P_2 O_6$	1.109, 15°	Sänger. A. C. P. 232, 1.
Ethyl hypophosphate	$(C_2 H_5)_4 P_2 O_6$	1.1170, 15°	" "
Propyl hypophosphate	$(C_3 H_7)_4 P_2 O_6$	1.134, 15°	" "
Isobutyl hypophosphate	$(C_4 H_9)_4 P_2 O_6$	1.125, 15°	" "
Methyl orthophosphate	$(C H_3)_3 P O_4$	1.2378, 0°	Weger. A. C. P. 221, 61.
" "	"	1.0019, 197°.2	
Dimethyl ethyl orthophosphate.	$(C H_3)_2 C_2 H_5 . P O_4$	1.1752, 0°	" "
" "	"	.95188, 203°.8	
Ethyl orthophosphate	$(C_2 H_5)_3 P O_4$	1.072, 12°	Limpricht. J. 18, 471.
Ethyl pyrophosphate	$(C_2 H_5)_4 P_2 O_7$	1.172, 17°	Clermont. J. 7, 562.
Amyl amylphosphite	$(C_5 H_{11})_2 H P O_3$	.967, 19°.5	Wurtz. A. C. P. 58, 77.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Diamylphosphoric acid	$(C_5H_{11})_2HPO_4$	1.025, 20°	Fehling.
Triphenyl phosphite	$(C_6H_5)_3PO_3$	1.184, 18°	Noack. A. C. P. 218, 99.
Phosphenyl ether	$C_6H_5PO_2(C_2H_5)_2$	1.032, 16°	Köhler and Michaelis. Ber. 10, 817.
Phenylphosphinic acid	$C_6H_5.H_2PO_3$	1.475, 4°	Schröder. Ber. 12, 561.
Diphenylphosphinic acid	$(C_6H_5)_2HPO_2$	1.331, 4°	" "
" "	"	1.347, 4°	" "
Phenoxyldiphenylphosphin.	$C_6H_5O(C_6H_5)_2P$	1.140, 24°	Michaelis and La Coste. Ber. 18, 2111.
Triphenylphosphin oxide	$(C_6H_5)_3PO$	1.2124, 22°.6	Michaelis and La Coste. Ber. 18, 2120.
Naphtylphosphinic acid	$C_{10}H_7.H_2PO_3$	1.485, 4°	Schröder. Ber. 12, 561.
" "	"	1.445, 4°	Schröder. Ber. 12, 561.
Naphtylphosphorous acid	$C_{10}H_7.H_2PO_2$	1.377, 4°	" "
" "	"	1.441, 4°, after fusion.	" "
Complex ether?	$C_{14}H_{36}P_2O_6$	.960, 14°	Geuther. A. C. P. 224, 278.
Amylnitrophosphorous acid.	$(C_5H_{11})_2HPNO_4$	1.02, 20°	Guthrie. J. 11, 404.
"	"	1.00, 70°	Guthrie. J. 11, 404.
Ethylphosphorous chloride	$C_2H_5POCl_2$	1.316, 0°	Menschutkin. A. C. P. 139, 344.
" "	"	1.305265, 0°	Thorpe. J. C. S. 37, 372.
" "	"	1.13989, 117°.5	Thorpe. J. C. S. 37, 372.
Butylphosphorous chloride.	$C_4H_9POCl_2$	1.191, 0°	Menschutkin. J. 19, 487.
Amylphosphorous chloride.	$C_5H_{11}POCl_2$	1.109, 0°	" "
Diacetone phosphorosochloride.	$C_6H_{10}PO_2Cl$	1.209, 17°.5	Michaelis. Ber. 18, 900.
Phenylphosphorous chloride.	$C_6H_5POCl_2$	1.3549	Hölzer. Quoted by Noack.
" "	"	1.348, 18°	Noack. A. C. P. 218, 91.
" "	"	1.3543, 20°	Anschütz and Emery. A. C. P. 239, 310.
Diphenylphosphorous chloride.	$(C_6H_5)_2PO_2Cl$	1.2494	Hölzer. Quoted by Noack.
" "	"	1.221, 18°	Noack. A. C. P. 218, 92.
Phosphenyl chloride	$C_6H_5PCl_2$	1.319, 20°	Michaelis. C. C. 4, 548.
" "	"	1.3428, 0°	Thorpe. J. C. S. 37, 372.
" "	"	1.10415, 224°.6	Thorpe. J. C. S. 37, 372.
Phosphenyl oxychloride	$C_6H_5PCl_2O$	1.375, 20°	Michaelis. C. C. 4, 548.
Diphenyl phosphochloride	$(C_6H_5)_2PCl$	1.2293, 15°	Michaelis and Link. A. C. P. 207, 209.

Name.	Formula.	Sp. Gravity.	Authority.
Metachlorocarbonylphenylorthophosphoric chloride.	$C_7 H_4 P O_2 Cl_3$	1.54844, 20°	Anschütz and Moore. A. C. P. 239, 335.
Parachlorocarbonylphenylorthophosphoric chloride.	"	1.54219, 20°	Anschütz and Moore. A. C. P. 239, 344.
By action of P Cl_5 on salicylic acid.	$C_7 H_4 P O_2 Cl_5$	1.62019, 20°	Anschütz and Moore. A. C. P. 239, 320.
Paraxylylphosphochloride.	$C_8 H_9 P Cl_2$	1.25, 18°	Weller. Ber. 21, 1494.
Paraxylylphosphoroxychloride.	$C_8 H_9 P O Cl_2$	1.31, 18°	" "
Sulphophosphorous ether	$(C_2 H_5)_3 P S_3$	1.24, 12°	Michaelis. C. N. 25, 57.
Ethyl pyrosulphophosphate.	$(C_2 H_5)_4 P_2 S_3 O_4$	1.1892, 17°	Michaelis. A. C. P. 164, 9.
Amyl sulphophosphate	$(C_5 H_{11})_3 P S O_3$	.849, 12°	Chevrier. J. 22, 344.
Ethylsulphophosphorous chloride.	$C_2 H_5 P S Cl_2$	1.30, 12°	Michaelis. C. N. 25, 57.
Triethoxylpyrophosphorsulphobromide.	$(C_2 H_5)_3 Br P_2 S_3 O_3$	1.8567, 19°	Michaelis. A. C. P. 164, 9.
Phosphenyl sulphochloride.	$C_6 H_5 P Cl_2 S$	1.376, 13°	Köhler and Michaelis. Ber. 9, 1053.
Triphenyltrisulphophosphamide.	$(C_6 H_5)_3 H_3 N_3 P S$	1.34	Chevrier. J. 21, 784.

LXV. ORGANIC COMPOUNDS OF VANADIUM, ARSENIC, ANTIMONY, AND BISMUTH.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl orthovanadate	$(C_2 H_5)_3 V O_4$	1.167, 17°.5	Hall. J. C. S. 51, 752.
Dimethylarsine oxide	$(As C_2 H_6)_2 O$	1.462, 15°	Bunsen. P. A. 40, 224.
Triethylarsine	$As (C_2 H_5)_3$	1.151, 16°.7	Landolt. J. 6, 492.
Methyl arsenite	$(C H_3)_3 As O_3$	1.428, 9°.6	Crafts. Z. C. 14, 324.
Ethyl arsenite	$(C_2 H_5)_3 As O_3$	1.224, 0°	Crafts. J. 20, 552.
Amyl arsenite	$(C_5 H_{11})_3 As O_3$	1.0525, 0°	Crafts.
Methyl arsenate	$(C H_3)_3 As O_4$	1.5591, 14°.5	Crafts. Z. C. 14, 324.
Ethyl arsenate	$(C_2 H_5)_3 As O_4$	1.3264, 0°	Crafts. J. 20, 551.
" "	"	1.3161, 8°.8	Crafts. J. 20, 551.
Phenylarsenic acid	$C_6 H_7 As O_3$	1.760, 4°	Schröder. Ber. 12, 561.
" "	"	1.808, 4°	Schröder. Ber. 12, 561.
" "	"	1.805, 4°	Schröder. Ber. 12, 561.
Diphenylarsenic acid	$C_{12} H_{11} As O_2$	1.545, 4°	" "

Name.	Formula.	Sp. Gravity.	Authority.
Diphenylarsine chloride	As $(C_6H_5)_2$ Cl	1.42231, 15°	La Coste and Michaelis. Ber. 11, 1885.
Phenylarsine bromide	As (C_6H_5) Br_2	2.0983, 15°	Michaelis. Ber. 10, 626.
Ethyl thioarsenite	As $(S\,C_2H_5)_3$	1.3141, 16°	Claesson. Lund Arsskrift, 1884–'5.
Trimethylstibine	Sb $(CH_3)_3$	1.523, 15°	Landolt. J. 14, 569.
Triethylstibine	Sb $(C_2H_5)_3$	1.3244, 16°	Löwig and Schweitzer. J. 3, 471.
Triamylstibine	Sb $(C_5H_{11})_3$	1.1333, 17°	Berlé. J. 8, 586.
"	"	1.0587	Cramer. J. 8, 590.
Triethylstibine chloride	Sb $(C_2H_5)_3$ Cl_2	1.540, 17°	Löwig and Schweitzer. J. 3, 476.
Triethylstibine bromide	Sb $(C_2H_5)_3$ Br_2	1.953, 17°	" "
Triphenylstibine	Sb $(C_6H_5)_3$	1.4998, 12°	Michaelis and Reese. A. C. P. 233, 46.
Metatritolylstibine	Sb $(C_7H_7)_3$	1.3957, 15°.7	Michaelis and Genzken. A. C. P. 242, 185.
Paratritolylstibine	"	1.35448, 15°.6	Michaelis and Genzken. A. C. P. 242, 169.
Bismuth trimethyl	Bi $(CH_3)_3$	2.30, 18°	Marquandt. Ber. 20, 1517.
Bismuth triethyl	Bi $(C_2H_5)_3$	1.82	Breed. J. 5, 602.
Bismuth triphenyl	Bi $(C_6H_5)_3$	1.5851, 20°	Michaelis and Polis. Ber. 20, 55.

LXVI. ORGANIC COMPOUNDS OF SILICON.

Name.	Formula.	Sp. Gravity.	Authority.
Silicon tetrethyl	Si $(C_2H_5)_4$	.7657, 22°.7	Friedel and Crafts. A. J. S. (2), 49, 311.
" "	"	.8341, 0°	Ladenburg. B. S. C. 18, 240.
Silicon hexethyl	Si_2 $(C_2H_5)_6$	.8510, 0°	Friedel and Ladenburg. A. C. P. 203, 251.
" "	"	.8403, 20°	
Silicon tetrapropyl	Si $(C_3H_7)_4$	.7979, 0°	Pape. Ber. 14, 1872.
" "	"	.7883, 15°	
Siliconheptane	Si C_6H_{16}	.7510, 0°	Ladenburg. A. C. P. 164, 300.
Silicodecane	Si C_9H_{22}	.7723, 0°	Pape. Ber. 14, 1872.
"	"	.7621, 15°	
Silicon triethyl phenyl	Si $(C_2H_5)_3$ C_6H_5	.9042, 0°	Ladenburg. C. C. 5, 312.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silicon tetraphenyl	$Si(C_6H_5)_4$	1.078, 20°	Polis. Ber. 19, 1012.
Para-silicon tetratolyl	$Si(C_7H_7)_4$	1.0793, 20°	" "
Meta-silicon tetratolyl	"	1.1188, 20°	" "
Silicon tetrabenzyl	"	1.0776, 20°	" "
Ethyl metasilicate	$(C_2H_5)_2SiO_3$	1.079, 24°	Ebelmen. A. C. P. 57, 339.
Methyl orthosilicate	$(CH_3)_4SiO_4$	1.0589, 0°	Friedel and Crafts. J. 18, 465.
Trimethyl ethyl orthosilicate.	$(CH_3)_3C_2H_5SiO_4$	1.023	Friedel and Crafts. J. 19, 491.
Dimethyl diethyl orthosilicate.	$(CH_3)_2(C_2H_5)_2SiO_4$	1.004, 0°	" "
Methyl triethyl orthosilicate.	$CH_3(C_2H_5)_3SiO_4$	.989, 0°	" "
Ethyl orthosilicate	$(C_2H_5)_4SiO_4$	.932	Ebelmen. A. C. P. 52, 324.
" "	"	.933, 20°	Ebelmen. A. C. P. 57, 334.
" "	"	.9676, 0°	Friedel and Crafts. A. J. S. (2), 48, 158.
" "	"	.9330, 22°.5	Mendelejeff. J. 13, 7.
Propyl orthosilicate	$(C_3H_7)_4SiO_4$	.915, 18°	Cahours. C. C. 4, 482.
Butyl orthosilicate	$(C_4H_9)_4SiO_4$	.953, 15°	Cahours. C. C. 5, 20.
Triethyl amyl orthosilicate	$(C_2H_5)_3C_5H_{11}SiO_4$	.926, 0°	Friedel and Crafts. A. J. S. (2), 43, 163.
Diethyl diamyl orthosilicate.	$(C_2H_5)_2(C_5H_{11})_2SiO_4$	.915, 0°	Friedel and Crafts. J. 19, 489.
Ethyl triamyl orthosilicate	$C_2H_5(C_5H_{11})_3SiO_4$	.913, 0°	" "
Amyl orthosilicate	$(C_5H_{11})_4SiO_4$	.868, 20°	Ebelmen. A. C. P. 57, 344.
Hexmethyl disilicate	$(CH_3)_6Si_2O_7$	1.1441, 0°	Friedel and Crafts. J. 18, 465.
Hexethyl disilicate	$(C_2H_5)_6Si_2O_7$	1.0196, 0°	Friedel and Crafts. J. 19, 489.
" "	"	1.0019, 19°.2	
Octethyl tetrasilicate	$C_{16}H_{40}Si_4O_{12}$	1.071, 0°	Troost and Hautefeuille. B. S. C. 19, 255.
" "	"	1.054, 14°.5	
Ethyl silicoacetate	$C_7H_{18}SiO_3$	.9283, 0°	Ladenburg. J. C. S. (2), 12, 40.
Methyl silicopropionate	$C_5H_{14}SiO_3$	.9747, 0°	Ladenburg. A. C. P. 173, 143.
Ethyl silicopropionate	$C_8H_{20}SiO_3$	.9207, 0°	Friedel and Ladenburg. A. C. P. 159, 259.
Ethyl silicobenzoate	$C_{12}H_{20}SiO_3$	1.0133, 0°	Ladenburg. J. C. S. (2), 11, 1026.
" "	"	1.0055, 10°	
Silicon diethyl diethylate	$C_8H_{20}SiO_2$	.8752, 0°	Ladenburg. A. C. P. 164, 300.
Triethylsilicol	$SiC_6H_{15}.OH$	.8709, 0°	" "
Silicoheptyl oxide	$(SiC_6H_{15})_2O$	.8831, 0°	Ladenburg. Ber. 4, 730.
" "	"	.8590, 0°	Ladenburg. A. C. P. 164, 300.
Silicoheptyl acetate	$SiC_6H_{15}.C_2H_3O_2$	.9039, 0°	" "
Silicoheptyl ethylate	$SiC_6H_{15}.C_2H_5O$	.8403, 0°	" "

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silicoheptyl chloride	$Si\ C_6\ H_{15}\ Cl$	.9249, 0°	Ladenburg. A. C. P. 164, 300.
Methylsilicic monochlorhydrin.	$Si\ C_3\ H_9\ Cl\ O_2$	1.1954, 0°	Friedel and Crafts. J. 19, 490.
Methylsilicic dichlorhydrin.	$Si\ C_2\ H_6\ Cl_2\ O_2$	1.2595	" "
Ethylsilicic monochlorhydrin.	$Si\ C_6\ H_{15}\ Cl\ O_3$	1.0483, 0°	Friedel and Crafts. A. J. S. (2), 48, 160.
Ethylsilicic dichlorhydrin	$Si\ C_4\ H_{10}\ Cl_2\ O_2$	1.144, 0°	Friedel and Crafts. J. 19, 488.
Ethylsilicic trichlorhydrin	$Si\ C_2\ H_5\ Cl_3\ O$	1.241, 0°	Friedel and Crafts. J. 19, 489.
Propylsilicic monochlorhydrin.	$Si\ C_9\ H_{21}\ Cl\ O_3$	.980	Cahours. C. C. 4, 482.
Propylsilicic dichlorhydrin.	$Si\ C_6\ H_{14}\ Cl_2\ O_2$	1.028	" "
Derivative of silicon triethylphenyl.	$Si\ C_{12}\ H_{19}\ Cl$	1.1085, 0°	Ladenburg. A. C. P. 173, 143.
Silicon iodoform	$Si\ H\ I_3$	3.362, 0°	Friedel. A. C. P. 149, 96.
" "	"	3.314, 20°	

LXVII. ORGANIC COMPOUNDS OF TIN.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Stanntetramethyl	$Sn\ (C\ H_3)_4$	1.3138, 0°	Ladenburg. Z. C. 13, 605.
Stanndiethyl	$Sn_2\ (C_2\ H_5)_4$	1.558, 15°	Löwig. J. 5, 584.
"	"	1.192	Buckton. J. 11, 392.
"Ethylene stannethyl"	"	1.410	Löwig. J. 5, 585.
Stanntriethyl	$Sn_2\ (C_2\ H_5)_6$	1.4115, 0°	Ladenburg. Z. C. 13, 604.
Stanntetrethyl	$Sn\ (C_2\ H_5)_4$	1.187, 13°.6	Frankland. J. 12, 411.
Stannethyltrimethyl	$Sn\ C_2\ H_5\ (C\ H_3)_3$	1.243	Cahours. J. 14, 551.
Stanndiethyldimethyl	$Sn\ (C_2\ H_5)_2\ (C\ H_3)_2$	1.2319, 19°	Frankland. J. 12, 412.
"	"	1.2509, 0°	Two lots. Morgunoff. Z. C. 10, 370.
"	"	1.2603, 0°	
Stanntetrapropyl	$Sn\ (C_3\ H_7)_4$	1.179, 14°	Cahours. B. S. C. 20, 190.
Stanntriethylphenyl	$Sn\ (C_2\ H_5)_3\ C_6\ H_5$	1.2639, 0°	Ladenburg. A. C. P. 159, 251.
Stanntriethyl ethylate	$Sn\ (C_2\ H_5)_3\ C_2\ H_5\ O$	1.2634, 0°	Ladenburg. A. C. P., 8th Supp., 60.
Stanndimethyl iodide	$Sn\ (C\ H_3)_2\ I_2$	2.872, 22°	Cahours. J. 12, 427.
Stanntrimethyl iodide	$Sn\ (C\ H_3)_3\ I$	2.155, 18°	Cahours. J. 12, 429.
" "	"	2.1432, 0°	Ladenburg. Z. C. 13, 605.
" "	"	2.1096, 18°	
Stanndiethyl iodide	$Sn\ (C_2\ H_5)_2\ I_2$	1.8	Cahours. J. 12, 424.
" "	"	2.0329, 15°	Frankland. J. 12, 413.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Stanntriethyl chloride	$Sn\ (C_2\ H_5)_3\ Cl$	1.428, 8°	Cahours. J. 12, 425.
" "	"	1.320	Löwig. J. 5, 588.
Stanntriethyl bromide	$Sn\ (C_2\ H_5)_3\ Br$	1.630	" "
Stanntriethyl iodide	$Sn\ (C_2\ H_5)_3\ I$	1.850	" "
" "	"	1.833, 22°	Cahours. J. 12, 424.
Stanntripropyl iodide	$Sn\ (C_3\ H_7)_3\ I$	1.692, 16°	Cahours. B.S.C. 19, 801.
Stanntributyl iodide	$Sn\ (C_4\ H_9)_3\ I$	1.540, 15°	Cahours. C. C. 5, 20.
"Ethstannethyl chloride"	$Sn_2\ C_{10}\ H_{25}\ Cl$	1.30	Löwig. J. 5, 588.
"Ethstannethyl bromide"	$Sn_2\ C_{10}\ H_{25}\ Br$	1.48	" "
"Ethstannethyl iodide"	$Sn_2\ C_{10}\ H_{25}\ I$	1.724	" "

LXVIII. ORGANIC COMPOUNDS OF ALUMINUM.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Aluminum ethylate	$Al\ (C_2\ H_5\ O)_3$	1.147, 4°	Gladstone and Tribe. C. N. 42, 3.
Aluminum propylate	$Al\ (C_3\ H_7\ O)_3$	1.026, 4°	" "
Aluminum butylate	$Al\ (C_4\ H_9\ O)_3$	.9825, 4°	" "
Aluminum amylate	$Al\ (C_5\ H_{11}\ O)_3$	.9804, 4°	" "
Aluminum phenylate	$Al\ (C_6\ H_5\ O)_3$	1.25, 4°	" "
Aluminum cresylate	$Al\ (C_7\ H_7\ O)_3$	1.166, 4°	" "
Aluminum thymolate	$Al\ (C_{10}\ H_{13}\ O)_3$	1.04, 4°	" "
Aluminum chloride and benzene.	$Al\ Cl_3.\ 3\ C_6\ H_6$	1.14, 0°	Gustavson. Ber. 11, 2152.
" " "	"	1.12, 20°	
Aluminum chloride and toluene.	$Al\ Cl_3.\ 3\ C_7\ H_8$	1.08, 0°	" "
" " "	"	1.06, 22°	
Aluminum chloride and cymene.	$2\ Al\ Cl_3.\ 3\ C_{10}\ H_{14}$	1.189, 0°	Gustavson. Ber. 12, 694.
" " "	"	1.127, 18°	
Aluminum bromide and benzene.	$Al\ Br_3.\ 3\ C_6\ H_6$	1.49, 0°	Gustavson. Ber. 11, 1845.
" " "	"	1.47, 20°	
Aluminum bromide and toluene.	$Al\ Br_3.\ 3\ C_7\ H_8$	1.37, 0°	Gustavson. Ber. 11, 1848.
" " "	"	1.35, 20°	
Aluminum bromide and cymene.	$2\ Al\ Br_3.\ 3\ C_{10}\ H_{14}$	1.493, 0°	Gustavson. Ber. 12, 694.
" " "	"	1.477, 16°	

LXIX. ORGANIC COMPOUNDS OF ZINC, MERCURY, THALLIUM, AND LEAD.

Name.	Formula.	Sp. Gravity.	Authority.
Zinc methyl	$Zn(CH_3)_2$	1.386, 10°.5	Frankland and Duppa. J. 16, 478.
Zinc ethyl	$Zn(C_2H_5)_2$	1.182, 18°	Frankland. J. 8, 577.
Zinc propyl	$Zn(C_3H_7)_2$	1.098, 15°	Gladstone and Tribe. J. S. C. (2), 11, 968.
Zinc amyl	$Zn(C_5H_{11})_2$	1.022, 0°	Frankland and Duppa. J. 16, 478.
Mercurmethyl	$Hg(CH_3)_2$	3.069	Buckton. J. 11, 388.
Mercurethyl	$Hg(C_2H_5)_2$	2.444	Buckton. J. 11, 390.
Mercurpropyl	$Hg(C_3H_7)_2$	2.124, 16°	Cahours. B. S. C. 19, 301.
Mercurbutyl	$Hg(C_4H_9)_2$	1.7469, 0°	Chapman and Smith. J. C. S. 22, 164.
"	"	1.7192, 16°	
"	"	1.835, 15°	Cahours. C. C. 5, 20.
Mercuramyl	$Hg(C_5H_{11})_2$	1.6663, 0°	Frankland and Duppa.
Mercuroctyl	$Hg(C_8H_{17})_2$	1.342, 17°	Eichler. Ber. 12, 1880.
Mercurdiphenyl	$Hg(C_6H_5)_2$	2.290, 4°	Schröder. Ber. 12, 561.
"	"	2.324, 4°	
"	"	2.340, 4°	
Mercurdinaphtyl	$Hg(C_{10}H_7)_2$	1.918, 4°	" "
"	"	1.926, 4°	
"	"	1.944, 4°	
Mercurmethyl chloride	$HgCH_3Cl$	4.063, 4°	" "
Mercurethyl chloride	HgC_2H_5Cl	3.461, 4°	" "
" "	"	3.503, 4°	
Mercury β hexyl mercaptide.	$Hg(C_6H_{13}S)_2$	1.6502, 0°	Wanklyn and Erlenmeyer. J. 17, 510.
Thallium ethylate	TlC_2H_5O	3.480	Lamy. Ann. (4), 3, 378.
" "	"	3.685	
Thallium amylate	$TlC_5H_{11}O$	2.465	Lamy. J. 17, 466
" "	"	2.518	
Lead tetramethyl	$Pb(CH_3)_4$	2.034, 0°	Butlerow. J. 16, 476.
Lead diethyl	$Pb(C_2H_5)_2$	1.55	Buckton. J. 11, 391.
" "	"	1.62	Buckton. J. 12, 409.
Lead triethyl	$Pb_2(C_2H_5)_6$	1.471, 10°	Klippel. J. 18, 381.
Lead tetraphenyl	$Pb(C_6H_5)_4$	1.5298, 20°	Polis. Ber. 20, 716.
Para lead tetratolyl	$Pb(C_7H_7)_4$	1.4329, 20°	" "

LXX. METALLIC SALTS OF ORGANIC ACIDS.

Name.	Formula.	Sp. Gravity.	Authority.
Lithium formate	$Li\,C\,H\,O_2.\,H_2\,O$	1.435	Schröder. Ber. 14, 21.
" "	"	1.479	
Sodium formate	$Na\,C\,H\,O_2$	1.907	" "
" "	"	1.981	
Potassium formate	$K\,C\,H\,O_2$	1.896	" "
" "	"	1.920	
Ammonium formate	$Am\,C\,H\,O_2$	1.264	" "
" "	"	1.271	
Zinc formate	$Zn\,C_2\,H_2\,O_4$	2.368	Schröder. Ber. 14, 28.
" "	$Zn\,C_2\,H_2\,O_4.\,2\,H_2\,O$	2.339	Schröder. Ber. 8, 199.
" "	"	2.205	Schröder. Ber. 14, 28.
" "	"	2.1575, 21°.8	Breen. F. W. C.
Cadmium formate	$Cd\,C_2\,H_2\,O_4.\,2\,H_2\,O$	2.429, 20°.2	" "
" "	"	2.427	Schröder. Ber. 14, 22.
" "	"	2.477	
Calcium formate	$Ca\,C_2\,H_2\,O_4$	2.021	Schröder. Ber. 8, 199.
" "	"	2.009	Schröder. Ber. 14, 22.
" "	"	2.015	
Strontium formate	$Sr\,C_2\,H_2\,O_4$	2.667	" "
" "	$Sr\,C_2\,H_2\,O_4.\,2\,H_2\,O$	2.252, cryst.	Schröder. Ber. 8, 199.
" "	"	2.266, pulv.	
" "	"	2.244, m. of 8	Schröder. Ber. 14, 22.
Barium formate	$Ba\,C_2\,H_2\,O_4$	3.193, cryst.	Schröder. Ber. 8, 199.
" "	"	3.219, pulv.	
" "	"	3.203	Two lots. Schröder. Ber. 11, 2129.
" "	"	3.233	
Lead formate	$Pb\,C_2\,H_2\,O_4$	4.56, 11°	Bödeker and Giesecke. B. D. Z.
" "	"	4.507	Schröder. Dm. 1873.
" "	"	4.555	
" "	"	4.610, cryst.	Schröder. Ber. 8, 199.
" "	"	4.621, pulv.	
Manganese formate	$Mn\,C_2\,H_2\,O_4$	2.205	Schröder. Ber. 14, 28.
" "	$Mn\,C_2\,H_2\,O_4.\,2\,H_2\,O$	1.947	" "
" "	"	1.954	
" "	"	1.959	
Nickel formate	$Ni\,C_2\,H_2\,O_4.\,2\,H_2\,O$	2.1547, 20°.2	H. Stallo. F. W. C.
Cobalt formate	$Co\,C_2\,H_2\,O_4.\,2\,H_2\,O$	2.1080, 20°.2	" "
" "	"	2.1286, 22°	
Copper formate	$Cu\,C_2\,H_2\,O_4.\,4\,H_2\,O$	1.815, 20°	Gehlen. Ann. 88, 213.
" "	"	1.811, pulv.	Schröder. Ber. 8, 199.
" "	"	1.795, cryst.	
" "	"	1.831 "	Schröder. Ber. 14, 28.
Strontium copper formate	$Sr_2\,Cu\,(C\,H\,O_2)_6$	2.612	Schröder. Ber. 14, 24.

Name.	Formula.	Sp. Gravity.	Authority.
Strontium copper formate	$Sr_2Cu(CHO_2)_6 \cdot 8H_2O$	2.132	Schröder. Ber. 14, 24.
" " "	"	2.133	
Barium copper formate	$Ba_2Cu(CHO_2)_6 \cdot 4H_2O$	2.747	" "
Didymium formate	$Di(CHO_2)_3$	3.427, 20°	Cleve. U. N. A. 1885.
" "	"	3.433, 20°	
Samarium formate	$Sm(CHO_2)_3$	3.730, 20°	" "
" "	"	3.732, 20°	
" "	"	3.737, 20°	
Sodium acetate	$NaC_2H_3O_2$	1.421, 14°	Bodeker. B. D. Z.
" "	"	1.524	Schröder. Ber. 14, 1608.
" "	"	1.529	
" "	"	1.53	Brügelmann. Ber. 17, 2359.
" "	$NaC_2H_3O_2 \cdot 3H_2O$	1.420	Buignet. J. 14, 15.
" "	"	1.40, 12°	Bödeker. B. D. Z.
" "	"	1.450	Schröder. Ber. 14, 1608.
" "	"	1.456	
Sodium triacetate	$NaC_6H_{11}O_6$	1.47	Lescoeur. C. R. 78, 1046.
Potassium triacetate	$KC_6H_{11}O_6$	1.34	" "
Silver acetate	$AgC_2H_3O_2$	3.1281, 15°	Liebig and Redtenbacher. P. M. (3), 19, 227.
" "	"	3.222	Schröder. Ber. 9, 1888.
" "	"	3.259	
Magnesium acetate	$Mg(C_2H_3O_2)_2$	1.419	Schröder. Ber. 14, 1610.
" "	"	1.422	
" "	$Mg(C_2H_3O_2)_2 \cdot 4H_2O$	1.453	" "
" "	"	1.455	
" "	"	1.4487	Kubel. Ber. 19, ref. 283.
Zinc acetate	$Zn(C_2H_3O_2)_2$	1.810	Schröder. Ber. 14, 1610.
" "	"	1.869	
" "	$Zn(C_2H_3O_2)_2 \cdot 2H_2O$	1.735	" "
" "	$Zn(C_2H_3O_2)_2 \cdot 3H_2O$	1.7175, 12°	Bödeker. B. D. Z.
Cadmium acetate	$Cd(C_2H_3O_2)_2$	2.329	Schröder. Ber. 14, 1611.
" "	"	2.352	
" "	$Cd(C_2H_3O_2)_2 \cdot 2H_2O$	1.998	" "
" "	"	2.021	
Mercuric acetate	$Hg(C_2H_3O_2)_2$	3.2544, 22°	Hagemann. F.W.C.
" "	"	3.2861, 23°	
Strontium acetate	$Sr(C_2H_3O_2)_2$	2.099	Schröder. Ber. 14, 1608.
" "	$2Sr(C_2H_3O_2)_2 \cdot 3H_2O$	1.981	" "
" "	"	2.018	
Barium acetate	$Ba(C_2H_3O_2)_2$	2.440	Schröder. Ber. 11, 2129.
" "	"	2.486	
" "	"	2.316	Two lots. Schröder. Ber. 12, 561.
" "	"	2.440	
" "	"	2.480	Schröder. Ber. 14, 1608.
" "	$Ba(C_2H_3O_2)_2 \cdot H_2O$	2.19, 13°	Bödeker. B. D. Z.
" "	$Ba(C_2H_3O_2)_2 \cdot 3H_2O$	2.014	Schröder. Ber. 14, 1608.
" "	"	2.026	
Lead acetate	$Pb(C_2H_3O_2)_2$	3.238	Schröder. Ber. 14, 1609.
" "	"	3.264	

Name.	Formula.	Sp. Gravity.	Authority.
Lead acetate	$Pb(C_2H_3O_2)_2 . 3H_2O$	2.496	Buignet. J. 14, 15.
" "	"	2.559, 13°	Schröder. Dm. 1873.
" "	"	2.540	Schröder. Ber. 14, 1609.
" "	"	2.560	
" "	"	2.460	W. C. Smith. Am. J. P. 53, 145.
Manganese acetate	$Mn(C_2H_3O_2)_2$	1.737	Schröder. Ber. 14, 1610.
" "	"	1.753	
" "	$Mn(C_2H_3O_2)_2 . 4H_2O$	1.588	" "
" "	"	1.590	
Nickel acetate	$Ni(C_2H_3O_2)_2$	1.797	" "
" "	"	1.799	
" "	$Ni(C_2H_3O_2)_2 . 4H_2O$	1.7346, 17°.2	H. Stallo. F. W. C.
" "	"	1.7443, 15°.7	
" "	"	1.734	Schröder. Ber. 14, 1610.
" "	"	1.758	
Cobalt acetate	$Co(C_2H_3O_2)_2 . 4H_2O$	1.7031, 15°.7	H. Stallo. F. W. C.
" "	"	1.7043, 18°.7	
Copper acetate	$Cu(C_2H_3O_2)_2$	1.920	Schröder. Ber. 14, 1609.
" "	"	1.939	
" "	$Cu(C_2H_3O_2)_2 . H_2O$	1.914, 20°	Gehlen. Ann. (1), 83, 213.
" "	"	1.880, m. of 4	Schröder. Dm. 1873.
" "	"	1.875 extremes 11°.	
" "	"	1.885	
" "	"	1.875	Schröder. Ber. 14, 1609.
" "	"	1.890	
Didymium acetate	$Di(C_2H_3O_2)_3$	2.125, 13°.5	Cleve. U. N. A. 1885.
" "	"	2.190, 16°.5	
" "	$Di(C_2H_3O_2)_3 . H_2O$	2.230 20°	" "
" "	"	2.244	
" "	$Di(C_2H_3O_2)_3 . 4H_2O$	1.881 18°.5	" "
" "	"	1.884	
Samarium acetate	$Sm(C_2H_3O_2)_3$	2.208, 18°.3	" "
" "	$Sm(C_2H_3O_2)_3 . 4H_2O$	1.942, 14°.5	" "
" "	"	1.938, 15°.5	
Calcium copper acetate	$CaCu(C_2H_3O_2)_4 . 8H_2O$	1.4206	Schabus. J. 3, 393.
Lithium uranyl acetate	$LiUO_2(C_2H_3O_2)_3 . 3H_2O$	2.280, 15°	Wyrouboff. B. S. M. 8, 118.
Sodium uranyl acetate	$NaUO_2(C_2H_3O_2)_3$	2.55, 12°	Bödeker and Giesecke. B. D. Z.
Sodium uranyl monochloracetate.	$NaUO_2(C_2H_2ClO_2)_3 . 2H_2O$	2.748, 14°	Clarke. A. C. J. 2, 331.
Silver propionate	$AgC_3H_5O_2$	2.714	Schröder. Ber. 10, 1872.
Barium propionate	$Ba(C_3H_5O_2)_2$	2.067, 22°.3	Stern. F. W. C.
" "	"	1.970	Schröder. Ber. 11, 2129.
Didymium propionate	$Di(C_3H_5O_2)_3$	1.861, 12°.5	Cleve. U. N. A. 1885.
" "	$Di(C_3H_5O_2)_3 . 3H_2O$	1.741, 12°.5	" "
" "	"	1.742, 13°	
Samarium propionate	$Sm(C_3H_5O_2)_3$	1.894, 14°	" "
" "	$Sm(C_3H_5O_2)_3 . 3H_2O$	1.784 13°.2	" "
" "	"	1.786	
" "	"	1.788	

Name.	Formula.	Sp. Gravity.	Authority.
Silver butyrate	$Ag\,C_4\,H_7\,O_2$	2.353, 4°	Schröder. Ber. 10, 848.
Barium butyrate	$Ba\,(C_4\,H_7\,O_2)_2$	1.768, 22°	Stern. F. W. C.
Barium isobutyrate	"	1.779	Schröder. Ber. 11, 2130.
" "	"	1.800	
Silver isovalerate. Ppt.	$Ag\,C_5\,H_9\,O_2$	2.110, 4°	Schröder. Ber. 10, 848.
" " Cryst.	"	2.118, 4°	
Silver caproate	$Ag\,C_6\,H_{11}\,O_2$	2.029, ppt.	From two caproic acids, probably not identical. Schröder. Ber. 10, 1872.
" "	"	2.052, cryst.	
" "	"	2.053, "	
" "	"	1.866, "	
" "	"	1.877, "	
Silver caprylate	$Ag\,C_8\,H_{15}\,O_2$	1.740, ppt.	Schröder. Ber. 10, 1873.
" "	"	1.771, cryst.	
Potassium methylsulphate	$K\,C\,H_3\,S\,O_4$	2.057	Schröder. Ber. 11, 2020.
Barium methylsulphate	$Ba(C\,H_3SO_4)_2.\,2\,H_2O$	2.276, 20°.2	Geppert. F. W. C.
" "	"	2.258	Schröder. Ber. 11, 2130.
" "	"	2.275	
Potassium ethylsulphate	$K\,C_2\,H_5\,S\,O_4$	1.792	Schröder. Ber. 11, 2020.
" "	"	1.809	
Barium ethylsulphate	$Ba(C_2H_5SO_4)_2.\,2\,H_2O$	2.0714, 22°.6	Geppert. F. W. C.
" "	"	2.080, 21°.7	
" "	"	2.055	Schröder. Ber. 11, 2130.
Didymium ethylsulphate	$Di\,(C_2H_5SO_4)_3.\,9\,H_2O$	1.860, 17°.8	Cleve. U. N. A. 1885.
" "	"	1.867, 18°	
Samarium ethylsulphate	$Sm(C_2H_5SO_4)_3.\,9\,H_2O$	1.874, 20°.8	" "
" "	"	1.885, 20°.8	
Potassium propylsulphate	$K\,C_3\,H_7\,S\,O_4$	1.794	Schröder. Ber. 11, 2020.
" "	"	1.831	
Barium propylsulphate	$Ba\,(C_3H_7S\,O_4)_2.\,2\,H_2O$	1.839, 20°.5	Geppert. F. W. C.
" "	"	1.844, 20°.5	
" "	"	1.844	Schröder. Ber. 11, 2130.
Potassium isobutylsulphate.	$K\,C_4\,H_9\,S\,O_4$	1.472	Schröder. Ber. 11, 2020.
"	"	1.486	
Barium isobutylsulphate	$Ba\,(C_4H_9S\,O_4)_2.\,2\,H_2O$	1.714, 22°	Whetstone. F.W.C.
" "	"	1.743, 24°.3	Schuermann. F. W. C.
" "	"	1.778, 21°.2	
" "	"	1.727	Schröder. Ber. 11, 2130.
" "	"	1.738	
Potassium amylsulphate	$K\,C_5\,H_{11}\,S\,O_4$	1.401	Schröder. Ber. 11, 2020.
" "	"	1.418	
Barium amylsulphate	$Ba(C_5H_{11}SO_4)_2.\,2H_2O$	1.623, 21°.2	Whetstone. F.W.C.
" "	"	1.632, 22°	
" "	"	1.638	Schröder. Ber. 11, 2130.
" "	"	1.641	
Potassium methylxanthate	$K\,C\,H_3\,C\,O\,S_2$	1.6754, 15°.2	Bishop. F.W.C.
" "	"	1.7002	
Potassium ethylxanthate	$K\,C_2\,H_5\,C\,O\,S_2$	1.558, 21°	Geppert. F. W. C.
" "	"	1.5564, 18°.2	H. Stallo. F. W. C.
" "	"	1.5576, 21°.5	
Potassium isobutylxanthate.	$K\,C_4\,H_9\,C\,O\,S_2$	1.3713, 15°	" "
"	"	1.3832, 14°.5	

Name.	Formula.	Sp. Gravity.	Authority.
Lithium oxalate	$Li_2 C_2 O_4$	2.1213, 17°.5	Stolba. J. 1880, 283.
Sodium hydrogen oxalate	$Na H C_2 O_4 . H_2 O$	2.315	Buignet. J. 14, 15.
Potassium oxalate	$K_2 C_2 O_4 . H_2 O$	2.104, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	2.08	Schiff. J. 12, 16.
Potassium hydrogen oxalate.	$K H C_2 O_4$	1.965, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" " "	"	2.030	Schiff. J. 12, 16.
" " "	"	2.088	Buignet. J. 14, 15.
Potassium quadroxalate	$K H_3 (C_2 O_4)_2 . 2 H_2 O$	1.817	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.765	Schiff. J. 12, 16.
" "	"	1.836	Buignet. J. 14, 15.
Rubidium quadroxalate	$Rb H_3 (C_2 O_4)_2 . 2 H_2 O$	2.1246, 18°	Stolba. J. 1877, 243.
Ammonium oxalate	$Am_2 C_2 O_4 . H_2 O$	1.461, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.475	Schiff. J. 12, 16.
" "	"	1.470	Buignet. J. 14, 15.
" "	"	1.501	Schröder. Dm. 1873.
" "	"	1.502	
Ammonium hydrogen oxalate.	$Am H C_2 O_4 . H_2 O$	1.563, m. of 3	Playfair and Joule. M. C. S. 2, 401.
" " "	"	1.556	Schiff. J. 12, 16.
Ammonium quadroxalate	$Am H_3 (C_2 O_4)_2 . H_2 O$	1.589, m. of 2	Playfair and Joule. M. C. S. 2, 401.
" "	"	1.607	Schiff. J. 12, 16.
Silver oxalate	$Ag_2 C_2 O_4$	4.96, 10°	Husemann. B. D. Z.
" "	"	5.005, 4°, ppt.	Schröder. Ber. 10, 849.
" "	"	5.029, 4°, cryst.	
Thallium oxalate	$Tl_2 C_2 O_4$	6.31	Lamy and Des Cloizeaux. Nature, 1, 442.
Thallium hydrogen oxalate.	$Tl H C_2 O_4 . H_2 O$	3.971	" "
Zinc oxalate	$Zn C_2 O_4$	2.547, 18°.3	Wilson. F. W. C.
" "	"	2.562, 24°.5	
" "	"	2.582, 17°.5	
Cadmium oxalate	$Cd C_2 O_4$	3.310, 17°	Freeman. F. W. C.
" "	"	3.320, 18°	
Calcium oxalate	$Ca C_2 O_4$	2.106	Schröder. Dm. 1873.
" "	"	2.181, 4°	Schröder. Ber. 12, 561.
" "	"	2.182, 4°	
" "	"	2.200, 4°	
Barium oxalate	$Ba C_2 O_4$	2.6578	Schweitzer. University of Missouri, special pub., 1876.
Lead oxalate	$Pb C_2 O_4$	5.018	Schröder. Dm. 1873.
" "	"	5.035	
Manganese oxalate	$Mn C_2 O_4$	2.422, 21°.8	Freeman. F. W. C.
" "	"	2.453, 20°.7	
" "	"	2.457, 21°.8	
Humboldtine	$2 Fe C_2 O_4 . 3 H_2 O$	2.13	Dana's Mineralogy.
"	"	2.489	
Nickel oxalate	$Ni C_2 O_4$	2.218, 19°	Freeman. F. W. C.
" "	"	2.2285, 19°.5	
" "	"	2.235, 18°.5	
Cobalt oxalate	$Co C_2 O_4$	2.296, 20°.5	" "
" "	"	2.325, 19°	

Name.	Formula.	Sp. Gravity.	Authority.
Stannous oxalate	$Sn\ C_2\ O_4$	3.558, 18	
" "	"	3.576, 22°.5	Wilson. F.W.C.
" "	"	3.584, 23°.5	
Thorium oxalate	$Th\ (C_2\ O_4)_2$	4.637, 16°	Clarke. A. C. J. 2, 175.
Uranyl oxalate	$U\ O_2.\ C_2\ O_4.\ 3\ H_2\ O$	2.98	Ebelmen. J. P. C. 27, 391.
Potassium copper oxalate	$K_2Cu\ (C_2O_4)_2.\ 2\ H_2O$	2.288, m. of 2	Playfair and Joule. M. C. S. 2, 401.
Ammonium copper oxalate.	$Am_2Cu(C_2O_4)_2.\ 2H_2O$	1.923	" "
Potassium chromoxalate	$K_3(Cr\ C_6\ O_{12}).\ 3\ H_2\ O$	2.1039, 23°	Bishop. F.W.C.
" "	"	2.1464, 24°	
Strontium chromoxalate	$Sr_3(CrC_6O_{12})_2.\ 10\ H_2O$	2.148, 8°.8	Kebler. F.W.C.
Strontium potassium chromoxalate.	$Sr\ K(Cr\ C_6O_{12}).\ 6\ H_2O$	2.155, 12°.8	" "
Barium chromoxalate	$Ba_3\ (Cr\ C_6\ O_{12})_2$	2.570, 6°.8	" "
" "	$Ba_3(CrC_6O_{12})_2.\ 6\ H_2O$	2.445, 13°.9	" "
" "	$Ba_3(CrC_6O_{12})_2.\ 12\ H_2O$	2.372, 27°	" "
Sodium ferroxalate	$2\ Na_3\ (Fe\ C_6\ O_{12}).\ 11\ H_2\ O$	1.9731, 17°.5	Eder and Valenta. Ber. 14, 1106.
Ammonium ferroxalate	$Am_3(FeC_6O_{12}).8\ H_2O$	1.7785, 17°.5	" "
Platosoxalic acid	$Pt\ H_2\ (C_2\ O_4)_2.\ H_2\ O$	2.94, 14°	Söderbaum. Upsala Diss. 1888.
Sodium platosoxalate	$Na_2\ Pt(C_2\ O_4)_2.\ 4\ H_2O$	2.89, 17°.2	" "
" "	$Na_2\ Pt(C_2\ O_4)_2.\ 5\ H_2O$	2.92, 17°.2	" "
Potassium platosoxalate.	$K_2\ Pt\ (C_2\ O_4)_2.\ 2\ H_2\ O$	3.037, 11°.6	" "
" " Light.	"	3.036, 12°	
" " Dark.	"	3.012, 12°	" "
Ammonium platosoxalate. Light.	$Am_2Pt(C_2O_4)_2.\ 2\ H_2O$	2.614, 11°.7	" "
" " Dark.	"	2.58, 11°.5	" "
Platodiamine platosoxalate. Light.	$Pt(N\ H_3)_4\ Pt(C_2\ O_4)_2$	3.51, 13°.5	" "
" " Dark.	"	3.48, 13°.5	" "
Didymium nitratoöxalate.	$Di\ H_2(N\ O_3)_2\ (C_2\ O_4)_3.\ 11\ H_2\ O$	2.424, 13°.2	Cleve. U. N. A. 1885.
" "		2.425, 13°.2	
Ammonium succinate	$Am_2\ C_4\ H_4\ O_4$	1.367, 10°	Zachariae. B. D. Z.
Silver succinate	$Ag_2\ C_4\ H_4\ O_4$	3.518, 10°	Husemann. B. D. Z.
" "	"	3.807, 4°	Schröder. Ber. 10, 849.
" "	"	3.833, 4°	
Barium succinate	$Ba\ C_4\ H_4\ O_4$	2.696	Schröder. Ber. 11, 2129.
" "	"	2.699	
Lead succinate	$Pb\ C_4\ H_4\ O_4$	3.800, 10°	Husemann. B. D. Z.
Ammonium malate	$Am_2\ C_4\ H_4\ O_5$	1.509	Wyrouboff. Bei. 8, 24.
Ammonium hydrogen malate.	$Am\ C_4\ H_5\ O_5$	1.55	Pasteur. J. 4, 392.
Silver malate	$Ag_2\ C_4\ H_4\ O_5$	4.0016	Liebig and Redtenbacher. A. C. P. 38, 139.

Name.	Formula.	Sp. Gravity.	Authority.
Sodium tartrate	$Na_2 C_4 H_4 O_6 . 4 H_2 O$	1.794	Buignet. J. 14, 15.
Potassium tartrate	$K_2 C_4 H_4 O_6$	1.975	Schiff. J. 12, 16.
" "	$K_2 C_4 H_4 O_6 . H_2 O$	1.960	Buignet. J. 14, 15.
Potassium hydrogen tartrate.	$K H C_4 H_4 O_6$	1.943	Schabus. J. 3, 378.
" " "	"	1.973	Schiff. J. 12, 16.
" " "	"	1.956	Buignet. J. 14, 15.
Ammonium tartrate	$Am_2 C_4 H_4 O_6$	1.566	Schiff. J. 12, 16.
" "	"	1.523	Buignet. J. 14, 15.
" "	"	1.601	Wyrouboff. Bei. 8, 24.
Ammonium hydrogen tartrate.	$Am H C_4 H_4 O_6$	1.680	Schiff. J. 12, 16.
Sodium potassium tartrate	$Na K C_4 H_4 O_6 . 4 H_2 O$	1.74	Mitscherlich.
" " "	"	1.767	Schiff. J. 12, 16.
" " "	"	1.790	Buignet. J. 14, 15.
" " "	"	1.77	W. C. Smith. Am. J. P. 53, 145.
Sodium ammonium tartrate.	$Na Am C_4 H_4 O_6 . 4 H_2 O$	1.58	Mitscherlich.
" " "	"	1.576	Pasteur. J. 2, 309.
" " "	"	1.587	Schiff. J. 12, 16.
Potassium ammonium tartrate.	$K Am C_4 H_4 O_6 . 4 H_2 O$	1.700	" "
Rubidium tartrate	$Rb_2 C_4 H_4 O_6$	2.692	Wyrouboff. Bei. 8, 24.
" "	$Rb_2 C_4 H_4 O_6 . H_2 O$	2.584	Wyrouboff. B. S. M. 6, 311.
Rubidium hydrogen tartrate.	$Rb H C_4 H_4 O_6 . \frac{1}{2} H_2 O$	2.399	" "
Rubidium lithium tartrate	$Rb Li C_4 H_4 O_6 . H_2 O$	2.281	Wyrouboff. B. S. M. 6, 53.
Rubidium sodium tartrate	$Rb Na C_4 H_4 O_6 . 2\frac{1}{2} H_2 O$	2.200	Wyrouboff. Ann. (6), 9, 221.
Silver tartrate	$Ag_2 C_4 H_4 O_6$	3.4321	Liebig and Redtenbacher. A. C. P. 38, 139.
Thallium tartrate	$Tl_2 C_4 H_4 O_6$	5.110	Wyrouboff. B. S. M. 6, 311.
" "	$Tl_2 C_4 H_4 O_6 . \frac{1}{2} H_2 O$	4.658	Lamy and Des Cloizeaux. Nature, 1, 142.
" "	"	4.740	Wyrouboff. B. S. M. 9, 102.
Thallium hydrogen tartrate.	$Tl H C_4 H_4 O_6$	3.496	Lamy and Des Cloizeaux. Nature, 1, 142.
" " "	$Tl H C_4 H_4 O_6 . \frac{1}{2} H_2 O$	3.399	Wyrouboff. B. S. M. 6, 311.
Thallium lithium tartrate	$Tl Li C_4 H_4 O_6 . H_2 O$	3.356	Wyrouboff. B. S. M. 6, 53.
Thallium sodium tartrate	$Tl Na C_4 H_4 O_6 . 2\frac{1}{2} H_2 O$	3.120	Wyrouboff. Ann. (6), 9, 221.
Strontium tartrate	$Sr C_4 H_4 O_6$	2.575, 17°.3	Joslin. F. W. C.
" "	"	2.579, 17°.1	
" "	"	2.593, 17°.4	
" "	$Sr C_4 H_4 O_6 . 4 H_2 O$	1.961, 19°	" "
" "	"	1.966, 19°.2	

Name.	Formula.	Sp. Gravity.	Authority.
Strontium tartrate	$Sr\,C_4\,H_4\,O_6.\,4\,H_2\,O$	1.972, 18°.1	Joslin. F.W.C.
Barium tartrate	$Ba\,C_4\,H_4\,O_6$	2.965, 21°.5	" "
" "	"	2.974, 21°.9	
" "	"	2.980, 20°.8	
Lead tartrate	$Pb\,C_4\,H_4\,O_6$	3.998, 16°.5	" "
" "	"	4.001, 17°.5	
" "	"	4.037, 17°.7	
Potassium tartrantimonite, or tartar-emetic	$2\,K\,C_4\,H_4\,Sb\,O_7.\,H_2\,O$	2.5569	Pasteur. Ann. (3), 28, 86.
" "	"	2.607	Schiff. J. 12, 16.
" "	"	2.588	Buignet. J. 14, 15.
" "	"	2.597	Topsoë and Christiansen.
Ammonium tartrantimonite.	$2\,Am\,C_4H_4Sb\,O_7.H_2O$	2.324	Topsoë. C. C. 4, 76.
Silver tartrantimonite	$Ag\,C_4\,H_4\,Sb\,O_7$	3.4805, 18°.2	Evans. F. W. C.
Thallium tartrantimonite	$2\,Tl\,C_4\,H_4\,Sb\,O_7.\,H_2\,O$	3.99	Lamy and Des Cloizeaux. Nature, 1, 142.
Barium tartrantimonite	$Ba\,(C_4\,H_4\,Sb\,O_7)_2.\,2\,H_2\,O$	3.112, 19°	Joslin. F. W. C.
Potassium borotartrate	$K\,C_4\,H_4\,B\,O_7$	1.832	Buignet. J. 14, 15.
Potassium racemate	$K_2\,C_4\,H_4\,O_6.\,2\,H_2\,O$	1.58	Mitscherlich.
Potassium hydrogen racemate.	$K\,H\,C_4\,H_4\,O_6$	1.954	Wyrouboff. B. S. M. 6, 311.
Potassium lithium racemate.	$K\,Li\,C_4\,H_4\,O_6$	1.610	Wyrouboff. B. S. M. 6, 53.
Potassium sodium racemate.	$K\,Na\,C_4\,H_4\,O_6.\,3\,H_2\,O$	1.783	Wyrouboff. B. S. C. 45, 52.
Rubidium racemate	$Rb_2\,C_4\,H_4\,O_6$	2.640	Wyrouboff. Bei. 8, 24.
Rubidium hydrogen racemate.	$Rb\,H\,C_4\,H_4\,O_6$	2.282	Wyrouboff. B. S. M. 6, 311.
Rubidium lithium racemate.	$Rb\,Li\,C_4\,H_4\,O_6$	2.192	Wyrouboff. Bei. 8, 24.
Ammonium racemate	$Am_2\,C_4\,H_4\,O_6$	1.601	Wyrouboff. B. S. M. 9, 102.
Ammonium hydrogen racemate.	$Am\,H\,C_4\,H_4\,O_6$	1.636	Wyrouboff. B. S. M. 6, 311.
Ammonium sodium racemate.	$Am\,Na\,C_4\,H_4\,O_6.\,H_2\,O$	1.740	Wyrouboff. Ann. (6), 9, 221.
Silver racemate	$Ag_2\,C_4\,H_4\,O_6$	3.7752	Liebig and Redtenbacher. A. C. P. 38, 139.
Thallium racemate	$Tl_2\,C_4\,H_4\,O_6$	4.783, 15°	Two varieties. Wyrouboff. B. S. M. 9, 102.
" "	"	4.803, 15°	
" "	$2\,Tl_2\,C_4\,H_4\,O_6.\,H_2\,O$	4.659	Lamy and Des Cloizeaux. Nature, 1, 142.
Thallium hydrogen racemate.	$Tl\,H\,C_4\,H_4\,O_6$	3.494	Wyrouboff. B. S. M. 6, 311.
Thallium lithium racemate.	$Tl\,Li\,C_4\,H_4\,O_6.\,2\,H_2\,O$	3.144	Wyrouboff. Ann. (6), 9, 221.
Thallium sodium racemate	$Tl\,Na\,C_4\,H_4\,O_6.\,2\,H_2\,O$	3.289	" "

Name.	Formula.	Sp. Gravity.	Authority.
Potassium racemantimonite.	$2 K C_4 H_4 Sb O_7 . H_2 O$	2.4768	Pasteur. Ann. (3), 28, 86.
Potassium citrate*	$K_3 C_6 H_5 O_7 . H_2 O$	1.98	W. C. Smith. Am. J. P. 53, 145.
Trisodium citrate	$2 Na_3 C_6 H_5 O_7 . 11 H_2 O$	1.857, 23°.5	Blakemore. F.W.C.
" "	"	1.859, 24°	
Diammonium citrate	$Am_2 C_6 H_6 O_7$	1.479, 22°	" "
Uranyl oleate	$U O_2 (C_{18} H_{33} O_2)_2$	1.13	Gibbons. Ber. 16, 964.
Calcium hippurate	$2CaC_{18}H_{16}N_2O_6 . 3H_2O$	1.318	Schabus. J. 3, 411.
Potassium orthonitrophenate.	$K C_6 H_4 N O_3 . H_2 O$	1.682, 20°	Post and Mehrtens. Ber. 8, 1552.
Silver orthonitrophenate	$Ag C_6 H_4 N O_3$	2.661, 20°	" "
Barium orthonitrophenate	$Ba (C_6 H_4 N O_3)_2$	2.3301, 20°	" "
Lead orthonitrophenate	$Pb_2O(C_6H_4NO_3)_2 . H_2O$	2.712, 20°	" "
Potassium metanitrophenate.	$K C_6 H_4 N O_3 . 2 H_2O$	1.691, 20°	" "
Barium metanitrophenate	$Ba(C_6H_4NO_3)_2 . 2H_2O$	2.343, 20°	" "
Lead metanitrophenate	$Pb O (C_6 H_4 N O_3)$	2.694, 20°	" "
Potassium paranitrophenate.	$K C_6 H_4 N O_3 . 2 H_2 O$	1.652, 20°	" "
Silver paranitrophenate	$Ag C_6 H_4 N O_3 . 2 H_2 O$	2.652, 20°	" "
Barium paranitrophenate	$Ba(C_6H_4NO_3)_2 . 8H_2O$	2.322, 20°	" "
Lead paranitrophenate	$PbO(C_6H_4NO_3) . 2H_2O$	2.682, 20°	" "
Potassium *a* dinitrophenate	$K C_6 H_3 N_2 O_5 . H_2 O$	1.778, 20°	" "
Silver *a* dinitrophenate	$Ag C_6 H_3 N_2 O_5 . H_2 O$	2.755, 20°	" "
Barium *a* dinitrophenate	$Ba(C_6H_3N_2O_5)_2 . 4H_2O$	2.439, 20°	" "
Lead *a* dinitrophenate	$Pb O H (C_6 H_3 N_2 O_5) . 2 H_2 O$	2.817, 20°	" "
Potassium β dinitrophenate	$K C_6 H_3 N_2 O_5$	1.757, 20°	" "
Silver β dinitrophenate	$Ag C_6 H_3 N_2 O_5$	2.733, 20°	" "
Barium β dinitrophenate	$Ba(C_6H_3N_2O_5)_2 . H_2O$	2.406, 20°	" "
Lead β dinitrophenate	$Pb O (C_6 H_3 N_2 O_5)_2$	2.807, 20°	" "
Lithium picrate	$Li C_6 H_2 N_3 O_7$	1.716, 19°	Beamer. F. W. C.
" "	"	1.724, 20°	
" "	"	1.740, 20°	
Potassium picrate	$K C_6 H_2 N_3 O_7$	1.852, 20°	Post and Mehrtens. Ber. 8, 1552.
Silver picrate	$Ag C_6 H_2 N_3 O_7$	2.816, 20°	" "
Thallium picrate	$Tl C_6 H_2 N_3 O_7$	3.039	Lamy and Des Cloizeaux. Nature, 1, 142.
Barium picrate	$Ba(C_6H_2N_3O_7)_2 . 4H_2O$	2.518, 20°	Post and Mehrtens. Ber. 8, 1552.
Lead picrate	$Pb (C_6H_2N_3O_7)_2 . H_2O$	2.831, 20°	" "
Samarium picrate	$Sm(C_6H_2N_3O_7)_3 . 8H_2O$	1.954, 18°.5	Cleve. U. N. A. 1885.
Ammonium benzoate	$Am C_7 H_5 O_2$	1.260 } 4°	Schröder. Ber. 12, 1611.
" "	"	1.264 } 4°	

*Smith gives this salt under the name "potassii citras," and assigns no formula.

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Silver benzoate	$Ag\ C_7\ H_5\ O_2$	2.258	Schröder. Ber. 9, 1889.
Calcium benzoate	$Ca(C_7H_5O_2)_2 . 3H_2O$	1.435, 4°	Schröder. Ber. 12, 1611.
" "	"	1.457, 4°	
Barium benzoate	$Ba(C_7H_5O_2)_2 . 3H_2O$	1.792, 4°	Schröder. Ber. 12, 561.
" "	"	1.808, 4°	
Silver cinnamate	$Ag\ C_9\ H_7\ O_2$	2.073, 4°	" "
Mellite	$Al_2\ C_{12}\ O_{12} . 18\ H_2\ O$	1.636	Kenngott.
"	"	1.642	

LXXI. SALTS OF ORGANIC BASES WITH INORGANIC ACIDS.*

NAME.	FORMULA.	SP. GRAVITY.	AUTHORITY.
Tetramethylammonium iodide.	$N\ (C\ H_3)_4\ I$	1.827, 17°	Owens. F. W. C.
"	"	1.831, 19°.5	
"	"	1.838, 4°	Schröder. Ber. 12, 561.
"	"	1.844, 4°	
Tetrethylammonium iodide.	$N\ (C_2\ H_5)_4\ I$	1.556, 4°	" "
" "	"	1.559, 4°	
" "	"	1.561, 4°	
Tetramethylammonium mercury iodide.	$N\ (C\ H_3)_4\ I.\ Hg\ I_2$	3.968, 24°	Owens. F. W. C.
"	"	3.971, 24°	
"	"	3.976, 23°.5	
"	"	4.008, 23°.2	
Ethylamine platinchloride	$(NC_2H_7 . H\ Cl)_2 PtCl_4$	2.250, 19°	Clarke. A. C. J. 2, 175.
" "	"	2.255, 19°	
Ethylamine aurochloride	$N\ C_2H_7 . H Cl. Au Cl_3$	2.824	Topsoë. S. W. A. 73, 97.
Diethylamine aurochloride.	$NC_4H_{11} . H Cl. Au Cl_3$	2.436	" "
Triethylamine aurochloride.	$NC_6H_{15} . H Cl. Au Cl_3$	2.197	" "
Guanidine carbonate	$(C\ H_5\ N_3)_2\ H_2\ C\ O_3$	1.238	Schröder. Ber. 13, 1070.
" "	"	1.251	
Aniline chlorhydrate	$C_6\ H_7\ N.\ H\ Cl$	1.201, 4°	Schröder. Ber. 12, 1611.
" "	"	1.216, 4°	
" "	"	1.227, 4°	
Aniline iodate	$C_6\ H_7\ N.\ H\ I\ O_3$	1.480, 15°	Beamer. F. W. C.
Aniline nitrate	$C_6\ H_7\ N.\ H\ N\ O_3$	1.356, 4°	Schröder. Ber. 12, 1611.
" "	"	1.360, 4°	
Aniline sulphate	$(C_6\ H_7\ N)_2 . H_2\ S\ O_4$	1.377, 4°	" "
Aniline tartrantimonite	$C_6\ H_7\ N.\ C_4\ H_5 Sb\ O_7$	1.890, 18°	Evans. F. W. C.
Rosaniline chlorhydrate	$C_{20}\ H_{19}\ N_3 . H\ Cl$	1.220	Rüdorff. Ber. 12, 252.
Diazobenzene nitrate	$C_6\ H_4\ N_2 . H\ N\ O_3$	1.37	Berthelot and Vieille. Bei. 5, 573.
Berberine chlorhydrate	$C_{20}\ H_{17}\ N\ O_4 . H\ Cl$	1.397, 19°.4	Clarke. A. C. J. 2, 174.
Berberine platinchloride	$(C_{20}\ H_{17} N\ O_4 . H\ Cl)_2\ Pt\ Cl_4$	1.758, 19°	" "

*Aniline tartrantimonite is included in this table for reasons of convenience.

Name.	Formula.	Sp. Gravity.	Authority.
Strychnine platinchloride	$(C_{21}H_{22}N_2O_2.HCl)_2.PtCl_4$	1.779, 18°.5	Clarke. A. C. J. 2, 174.
Cinchonine chlorhydrate	$C_{20}H_{24}N_2O.HCl$	1.234	Hesse. J. 15, 371.
Picolinic acid platinchloride.	$(C_6H_5NO_2.HCl)_2PtCl_4.2H_2O$	2.0672, 21°.8	Weidel. Ber. 12, 1989.
Nicotinic acid platinchloride.	$(C_6H_5NO_2.HCl)_2PtCl_4.2H_2O$	2.1297, 21°.8	" "
Triethylphosphin platosochloride.	$PtCl_2.(C_6H_{15}P)_2$	1.5, 10°	Cahours and Gal. Z. C. 13, 487.

LXXII. MISCELLANEOUS ORGANIC COMPOUNDS.

Name.	Formula.	Sp. Gravity.	Authority.
Ethyl selenite	$(C_2H_5)_2SeO_3$	1.49, 16°.5	Michaelis. A. C. P. 241, 159.
Glucose with sodium chloride.	$2C_6H_{12}O_6.NaCl.H_2O$	1.55 } 11°	Bödeker. B. D. Z.
" "	"	1.59 } 11°	
Cane sugar with sodium iodide.	$2C_{12}H_{22}O_{11}.3NaI.3H_2O$	1.854	Gill. J. C. S. 24, 269.
Ferrous sucrocarbonate	$3C_{12}H_{22}O_3.2FeCO_3$	1.85	Tanret. J. C. S. 40, 157.
Salt from lead acetate and potassium triodide.	$Pb_3K_6C_{36}H_{54}O_{28}I_{17}$	3.084	Johnson. C. N. 37, 110.
Chloraurotriethylphosphorous ether.	$AuClP(OC_2H_5)_3$	2.025	Lindet. C. R. 103, 1014.

APPENDIX.

NOTE ON THE SPECIFIC GRAVITY OF WOOD.

Although wood is a substance which does not come within the scope of these tables, the following references to literature are given as a matter of convenience.

Aschauer.—Dove's Repertorium, 1, 142.

Brisson.—Pesanteur Spécifique des Corps.

Estrada.—Cuban woods. Van Nostrand's Magazine, 29, 417. 1883.

Hoh.—Beiblätter (Wiedemann's), 2, 534.

Ihlseng.—Amer. Journ. Sci. (3), 17, 125.

Karmarsch.—Dove's Repertorium, 1, 141.

Kopp.—Dove's Repertorium, 7, 171; also Ann. Chim. Phys. (3), 6, 380.

Mendenhall.—Ohio Agricultural and Mechanical College, Report for 1878.

Osborne.—"Report on Class III," Melbourne Exhibition of 1861. Many data for Australian woods and essential oils.

Sharples.—Vol. IX, Reports of Tenth U. S. Census. Complete as to woods of the United States.

Smith.—Journ. Chem. Soc., June, 1880, p. 417.

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Many figures are also given in Böttger's "Tabellarische Uebersicht."

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TO THE

LITERATURE

OF THE

SPECTROSCOPE.

ALFRED TUCKERMAN, PH. D.

WASHINGTON:
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ADVERTISEMENT.

With the rapid accumulation of scientific memoirs and discussions, published from year to year in numerous journals and society proceedings, a constantly larger expenditure of time and labor is required by both the investigator and the student, to learn the sources of information and the condition of discovery in any given field. Hence is felt the growing need of classified indexes to the work done in the various fields of research, and hence the corresponding tendency of the age to supply such demand.

The present work aims at a general survey of Spectroscopic Literature, with references to authorities in its more special subdivisions, and it has been prepared for the Institution by Mr. Tuckerman, without other remuneration than the expectation of serving the interests of scientific inquirers.

It has been brought down to the middle of the year 1887.

S. P. LANGLEY,
Secretary Smithsonian Institution.

WASHINGTON, *February*, 1888.

PREFACE.

This work is intended to be a list of all the books and smaller treatises, especially contributions to scientific periodicals, on the spectroscope and spectrum analysis from the beginning of our knowledge upon the subject until July, 1887; an Index or Bibliography of the Spectroscope and Spectrum Analysis.

It was begun at the suggestion of Dr. Wolcott Gibbs, whose work in connection with the subject is well known.

The object is to enable a chemist to find out at a glance all that has been published in any branch of his subject where the spectroscope is used, and what every writer has published.

The method pursued has been as follows: 1, to examine the bibliographies, booksellers' catalogues, and books on spectrum analysis for books; 2, to examine the scientific periodicals for the shorter treatises, the first and original contributions to the subject, and this was done volume by volume wherever there was no index to a series of years—as in the Comptes Rendus and the later volumes of the Annales de Chemie et de Physique and of (Poggendorff's, now Wiedemann's) Annalen der Physik und Chemie, as well as others. Use was made of the bibliography at the end of Roscoe's Spectrum Analysis, and in the reports of the British Association for 1881 and 1884, for such books and articles as the author could not find elsewhere. Credit is also due to the Astor Library and its managers for the means it afforded the author of making this Index.

After the greater part of the material was collected it was divided into such subjects as the titles indicated, in alphabetical order, easy finding being constantly kept in view. Titles have often been repeated more than once so as to make sure of their being found. Finally, at the suggestion of the Smithsonian Institution, the List of Authors was added.

The author hopes that his two objects, fullness and ready access of all the titles, will prove to have been gained.

NEW YORK, 1887.

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AURORA AND ZODIACAL LIGHT.

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(Look below under Pocklington.)

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On the blue band in the lithium spectrum.

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Lecoq de Boisbaudran (F.). Spectres Lumineux, Paris, 1874, p. 56, planche VI.

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MAGNESIUM.

Lead and magnesium spark spectrum, magnesium spark spectrum, magnesium arc spectrum.

Capron (J. R.). Photographed Spectra, London, 1877, p. 34, 35, 36.

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(Wave-lengths. Spectra of carburetted hydrogen; of carbonic oxide; bioxide of nitrogen; of light at the negative pole; of oxygen; of carbon; of hydrogen; some isolated rays of carburetted hydrogen, and of carbonic oxide.)

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(Wave-lengths.)

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Kirchhoff (G.). Besondere Abdrücke aus den Abhandlungen der Berliner Akademie der Wissenschaften, 1861 und 1862. I. Theil, Dümmler, Berlin, 1864, 4°. II. Theil, Dümmler, Berlin, 1875, 4°. Mit vier Tafeln.

(He used an arbitrary scale.)

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[A photographic map of the solar spectrum is being prepared by Prof. Rowland, and some parts of it have been distributed, viz: wave-lengths 0.0003675 to 0.0005796.]

Mémoire sur la détermination des longueurs d'onde des raies métalliques.

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[Thollon's map of the solar spectrum is in Vol. I of the Annales de l'Observatoire de Nice, which is about to appear. Vol. II will contain a smaller map or sheets of the group B.]

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Constanz der Metallspectren.

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Metallspectra.

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